RECORDS CODE SHEET
5ND 4535 (Rev. 1-62)

NAVAL AVIATION SAFETY CENTER

GENERAL (Card No. 1)

Item	Code	Cols
Bureau Number	1 4 5 Ø 6 6	16-21
Reporting Custodian	6 2 4	22-24
Type of Duty	2 5	25-26
Major Command	1	27
Aircraft Damage	A	28
Aircraft Injury	C D	29
Maneuver prior to Accident	G	30
First Accident type	G 6	31-32
First Accident phase	4 3 4	33-35
Second Accident type	6 1	36-37
Second Accident phase	A 2	38-40
Type of Operation	3	41-42
Contributing Cause Factors	3	43-47
Pilot Factor, First		48-49
Pilot Factor, Second		50-51
Pilot Factor, Third		52-53
First other Personnel Factor		54-55
Second other Personnel Factor		56-57
Primary Major Material Factor	F	58
Secondard Major Material Factor		59
Design		60
Facilities		61
Special Data & Cond.	G D J 5 8	62-68
Type of Flight Hazard		69
Pri. Cause/~~Avoidable Inc. or Flt Haz or Gr Acd't~~	3	70
Causal Fac for Pri-Cause	F	71-72
Carrier Hull Number		73-74
No Personnel Card ("R")		80

SUPPLEMENTARY (Card No. 2)

Item	Code	Cols
Weather		16-21
Kind of Flight	1 K	22-24
Relative Wind - Direction		25
Relative Wind - Velocity		26
Relative Wind (Old Code - Not in Use)		27
Clearance	2	28
Time of Day	2	29
Number of other Aircraft		30
Altitude of Occurrence	2 Ø Ø	33-35
POSSIBLE FACTORS: Contributing Cause Factors		36-37
POSSIBLE FACTORS: Pilot Factor		38-39
POSSIBLE FACTORS: Other Personnel Factor		41-42
POSSIBLE FACTORS: Major Material Factor		43
POSSIBLE FACTORS: Design		44
POSSIBLE FACTORS: Facilities		45
POSSIBLE FACTORS: Weather		46
Non-Navy Injury ("R")		47
Number of "A" or "L" or "M" Injury		48-49
Number of "B" Injury		50-51
Number of "C" Injury	Ø 1	52-53
Number of "D" Injury	Ø 1	54-55
Number of "E" Injury		56-57
Location	61 A 5 E L C T R	62-68
Facility Data		69-74

ACCIDENT DAMAGE	A	9
ACCIDENT INJURY	D C	10
FISCAL YEAR	3	75

I.D. NO. (Don't Count / Enemy Action / Other Aircraft)

1 YR	2 3 MO	4 5 DAY	6 TYP	7 8 SEQ
2	Ø 9	2 5	1	Ø 1

Model (11-15): A 4 D 2 N

SPECIAL ATTN: ("X") X

IBM: The above Fields are to be punched in all Coded Code — Model Code (76 77): Ø 4

PERSONNEL STATISTICS (Card No. 3)

File Number → [redacted]

Name / Cols	Rank/Rate	Br Service	Age	Yrs Experience	Status	Position	Inj to Ind	Abandon A/C	Pilot Factor Involved	Trainer Utilization	Instr. Card	Total Time All Models	All Models 3 Months	All Series This Model	All Ser Mod 3 Months	CV Landings	Instrument Hours	Nite Hours	Total Time Jet or Helo
Name 16 17 18 19 20 21																			
0[redacted]	2	1	L	J	A	1	D	2	2	Ø Ø	2	4 1	Ø 8	9 7	Ø 6		Ø 5	Ø 2	9 9
22 23 24 25 26 27 28 29 30 31	32	35	37	40	42	45	47	49	51	52-53	55	56-57	58-59	62-63	65-66	68	69-70	71-72	73-74
04																			
Name 16 17 18 19 20 21																			
File Number →																			

IBM: PERSONNEL CODED ON REVERSE SIDE ☐

CODED [initials] REVIEWED [initials] LOGGED dO PUNCHED ZC VERIFIED .... REVIEWED [initials] REPUNCHED ....

CODE SHEET REVIEWED BY CLASS DESK ANALYST .... (Initials) .... (Date)

A & R DEPARTMENT NARRATIVE CODE SHEET

21 FEB 1963

YEAR	MTH	DAY	TYPE NO.	DAM	INJ	MODEL
1 2	3 4	5	6 7	8 9	10	11 12 13 14 15
X 0	9	X 5	1 0	1 A	X C	A 4 D 2 N

BUREAU NUMBER

1	4	5	0	4	6

X

75	76	77	78
3	0	4	6

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70

PREPARED BY _____ R&S LOG CLERK _____ PUNCHED _____ VERIFIED _____

NARRATIVE BRIEF

16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70

Fuel leak stra/level flt 20M/.68Mach dur drop tank trf
Switch in Off posit fuel indc contd decrease. F/O 15M
IMT fuel. Attempt Relites NEG. Eject 7M/280. Fuel Syst
Malf. Probable fail or Rupt bottom port fuselage f/cell
Cont: fuel boost pump.

NOV 15 1962

PREPARED BY J. M. S PUNCHED D VERIFIED FF

U. S. NAVAL AVIATION SAFETY CENTER
U. S. NAVAL AIR STATION
NORFOLK 11, VIRGINIA

NASC:113:dj
Ser: 965
25 April 1963

SPECIAL HANDLING REQUIRED IAW OPNAVINST P3750.6 SERIES

From: Commander, U. S. Naval Aviation Safety Center
To: Commanding Officer, Air Development Squadron FIVE

Subj: VX-5 AAR ser 1-62 concerning A-4C (A4D-2N) BuNo 145066 accident occurring 25 September 1962, pilot (b) (6)

1. The subject report and all endorsements theron have been reviewed. The Naval Aviation Safety Center concurs with the comments and recommendations of the Aircraft Accident Board as modified by subsquent endorsers.

2. The cause of this accident has been recorded by the Center indicating material malfunction of the fuel system as the single conributing factor.

(b) (6)
By direction

Copy to:
BUWEPS (F-12) (2)
COMFAIRSAN DIEGO
COMNAVAIRPAC
CO ATKRON 125
BUWEPSREP LONG BEACH
COMOPTEVFOR
CO NAVPARFAC EL CENTRO
CINCPACFLT

3

F-123:ATP/69

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PARAGRAPH 70, OPNAVINST 3750.6D

7 MAR 1963

FOURTH ENDORSEMENT on AIRDEVRON 5 AAR ser 1-62 concerning A4C (A4D-2N) BUNO 145066 accident occurring 25 September 1962 pilot (b) (6)

From: Chief, Bureau of Naval Weapons
To: Commander, U. S. Naval Aviation Safety Center

Subj: AIRDEVRON 5 AAR ser 1-62

Ref: (c) BUWEPS ltr RAAE-3331/80:JD to Douglas Aircraft Company, Inc., Long Beach, of 31 Nov 1962, NOTAL.

1. Forwarded.

2. Reference (c) approved the installation of a larger fuel pump bracket as a class II change in production aircraft. In addition, an Engineering Change Proposal was requested for the retrofit of all A-4 aircraft.

3. Change effectivity numbers for in production A-4C and A-4E have been established. The ECP has not been received as of this date.

(b) (6)

By direction

Copy to:
COMNAVAIRPAC
COMFAIRSAN DIEGO
CO, AIRDEVRON 5

4

FF4-1/3750
Ser 80/10971

23 NOV 1962

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PARAGRAPH 70, OPNAVINST 3750.6D

THIRD ENDORSEMENT on AIRDEVRON 5 AAR ser 1-62 concerning A4C (A4D-2N) BUNO 145066 accident occurring 25 September 1962 pilot (b) (6)

From: Commander Naval Air Force, U.S. Pacific Fleet
To: Commander, U.S. Naval Aviation Safety Center
Via: Chief, Bureau of Naval Weapons

Subj: AIRDEVRON 5 AAR ser 1-62

1. Readdressed and forwarded for Bureau of Naval Weapons consideration of the recommendation to increase the width of the fuel boost pump bracket (part number 366809) so as to increase support for the bottom of the fuel cell where the fuel pump is located.

2. Commander Naval Air Force, U.S. Pacific Fleet concurs with the comments and recommendations of the aircraft accident board and in the remarks contained in subsequent endorsements.

3. The following administrative errors are noted:

a. Page 1, section B, item 6 should read cockpit vice pilot.

b. Date of last flight, page 1, section B, item 12 should be the last flight prior to the flight on which the accident occurred.

c. The pages of the AAR were not numbered consecutively.

4. For purposes of safety awards this accident is administratively charged to AIRDEVRON 5.

(b) (6)

By direction

Copy to:
BUWEPS (F 12)
COMNAVAVNSAFECEN (2)
CO ATKRON 125
CO AIRDEVRON 5
BUWEPS REP LONG BEACH
COMOPTEVFOR
CO NAVPARFAC EL CENTRO

FF7/3750
Serial No.:
80/ 3745

5 NOV 1962

SPECIAL HANDLING REQUIRED IN ACCORDANCE
WITH PARAGRAPH 70, OPNAVINST 3750.6D

SECOND ENDORSEMENT on VX-5 AAR ser 1-62 concerning A4D-2N, BUNO 145066, accident occurring 25 Sep 1962, pilot (b) (6)

From: Commander Fleet Air San Diego
To: Commander, U.S. Naval Aviation Safety Center
Via: Commander Naval Air Force, U.S. Pacific Fleet

Subj: VX-5 AAR ser 1-62 BUNO 145066, pilot (b) (6)

1. Forwarded, concurring with the findings and for consideration of the recommendations of the Aircraft Accident Board.

2. The following administrative error was noted:

a. The senior member of the Aircraft Accident Board was not senior in rank to the pilot involved in the aircraft accident. When this requirement is impractical to meet, a statement of reason should be so stated in the report. (Page 18 para 31a OPNAVINST P3750.6D CH-2).

(b) (6)

CHIEF OF STAFF

Copy to:
NAVAVNSAFECEN (2) (Air Mail)
BUWEPS (1)
COMNAVAIRPAC (1)
CINCPACFLT (1)
COMOPTEVFOR (1)
BUWEPSREP LBEACH (1)
CO, VA-125 (1)
CO, NAVPARAFAC, EL Centro (1)
CO, VX-5

16

6

AIRCRAFT ACCIDENT REPORT
OPNAV FORM 3750-1 (Rev. 12-59) PAGE 1

SPECIAL HANDLING REQUIRED *in accordance with Para. 65, OPNAV INSTRUCTION 3750.6C*

OPNAV REPORT 3750-1

PART I - GENERAL

SECTION A - IDENTIFICATION

1. A/C ACCIDENT BOARD APPOINTED BY: Commanding Officer, AIRDEVRON FIVE	2. DATE OF ACCIDENT: 25 SEP 62	TIME (LZT): 1351	3. SERIAL NUMBER: 1-62
4. TO: Commander, U.S. Naval Aviation Safety Offc	5. ENCLOSURES: (1) Medical Officer's Report		
6. VIA: (1) CO, AIRDEVRON FIVE	(2) Messages		
(2) (2) COMFAIRSDIEGO	(3) (3) Pilot's Statement		
(3) (3) COMNAVAIRPAC	(4) (4) Wingman's Statement		
(4)	(5) (5) Transcript of ElCentro Towers Tape		
(5)	(6) (6) Wreckage Diagram		
(6)	(7) (7) Legend of Wreckage Diagram		
(LAST)	(8) (8) Pictures		
7. REPORTING CUSTODIAN *(if different than item 1. above)*: -	(9)		
	8. ACTIVITY OPERATING A/C *(if different than item 7.)*: -		
9. KIND OF FLIGHT: IK	10. TIME OF DAY: ☐ DAWN ☒ DAY ☐ DUSK ☐ NIGHT	11. LOCATION OF ACCIDENT: El Centro, Calif.	12. ELEVATION ABOVE SEA LEVEL: -150'
13. PLACE OF LAST TAKE-OFF: NAF, China Lake, Calif.		14. CLEARED: FROM NAF, China Lake TO NAF, China Lake	
15. TYPE CLEARANCE: ☐ IFR ☒ VFR ☐ DVFR ☒ LOCAL ☐ OPERATIONAL ☐ AIRWAYS ☐ DIRECT ☐ OTHER *(Specify)*			
16. TIME IN FLIGHT: .5	17. TYPE ACCIDENT: Flame Out	18. PHASE OF FLIGHT: Level Flight (enroute)	
A/C: 19. MODEL: A4D-2N	20. SERIAL NO.: 145066	21. DAMAGE TO A/C: ☒ A ☐ B ☐ C ☐ D ☐ E ☐ F	22. DOLLAR COST: 587,000 / 23. AIRSPEED (Kts.): 410 / 24. A/C WEIGHT: 18,000
25. LIST MODEL, SER NR, REPORTING CUSTODIAN AND DAMAGE CLASSIFICATION OF ANY OTHER A/C INVOLVED *(Complete an OPNAV FORM 3750-1 for each A/C involved)*: None			

1. NAME *(Last, first and middle initials)*	2. RANK, RATE	FILE, SER. NO.	DESIG-NATOR	BRANCH OR SERVICE	3. AGE	4. YRS. OF EXP. DNA	5. BILLET	6. POSITION	7. INJURY CODE
PILOT (at controls at time of accident): CDR (b) (6)	CDR	(b) (6)	1310	USN	40	19½	Projects Director	Pilot	0
CO-PILOT									

SECTION B - PERSONNEL DATA

PERSONNEL		8. OFT - OPERATIONAL FLIGHT TRAINER AVAILABLE	8. OFT - OPERATIONAL FLIGHT TRAINER USED	9. CPT - COCKPIT PROC. TRAINER AVAILABLE	9. CPT - COCKPIT PROC. TRAINER USED
PILOT	YES				
	NO	X	X		
CO-PILOT	YES				
	NO				

10. UNIT TO WHICH PERSONNEL ARE ATTACHED

11. TYPE INSTRUMENT CARD: ☒ STANDARD ☐ SPECIAL / ☐ STANDARD ☐ SPECIAL

PILOT EXPERIENCE IN HOURS

12. ITEM		PILOT	CO-PILOT
ALL MODELS X		4135.9	
ALL MODELS IN LAST 12 MONTHS X		2232	
ALL MODELS IN LAST 3 MONTHS X		87.8	
ALL SERIES A4D THIS MODEL *(Item 19)*	A/C X	973.8	
	OFT / CPT		
ALL SERIES A4D-2N THIS MODEL LAST 12 MONTHS	A/C X	130.9	
	OFT / CPT		
ALL SERIES A4D-2N THIS MODEL LAST 3 MONTHS	A/C	60.2	
	OFT / CPT		

ITEM	PILOT	CO-PILOT
CV LANDINGS DAY/NIGHT	426	
FCLP LANDINGS DAY/NIGHT	1653	
INSTRUMENT HOURS LAST 3 MONTHS	4.5	
NIGHT HOURS LAST 3 MONTHS	2.2	
TOTAL HELO. HRS. *(Helo. AAR Only)*		
TOTAL JET HOURS *(Jet AAR Only)*	1138.5	
LAST FLIGHT, ALL SERIES THIS MODEL — DATE	25SEP62	
LAST FLIGHT, ALL SERIES THIS MODEL — DURATION	.5	

OTHER PERS.

13. NAME *(Last, first and middle initials)*	DNA	RANK RATE	FILE/SERVICE NO.	ORG. TO WHICH ATTACHED	INJURY CODE	BILLET	POSITION
1. NONE							
2.							
3.							
4.							
5.							

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D

OPNAV FORM 3750-1 (Rev 12-59)
PAGE 2

AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

C. WEATHER

1. CEILING	2. VISIBILITY	3. RELATIVE WIND (SEE INST'S)	4. TEMPERATURE	5. DEW POINT	6. ALTIMETER SETTING
None	15 +	____REL / ____KTS NA	OAT ____ RUNWAY NA	NA	NA

7. OTHER WEATHER CONDITIONS *(winds aloft, icing levels, sea state, etc.. if pertinent to accident)*

4500 Scat, 9000 Scat,

D. CONTRIBUTING FACTORS

√	FACTOR	√	FACTOR	√	FACTOR
	PILOT		LANDING SIGNAL OFFICER		MATERIAL FAILURE OR MALFUNCTION
	CREW		OTHER PERSONNEL *(Specify)*		DESIGN
	SUPERVISORY PERSONNEL		ADMINISTRATIVE		ROLLING AND PITCHING DECK/ ROUGH SEAS
	MAINTENANCE PERSONNEL		AIRPORT OR CARRIER FACILITIES		UNDETERMINED
	SERVICING PERSONNEL		WEATHER	x	OTHER *(Specify)* Suspect Fuselage Fuel Cell Failure

E. DEPLOYMENT

FOR ACCIDENTS ABOARD DEPLOYED CARRIER *(Complete following Section on Pilot)*

1. DATE DEPLOYED	2. DAY - HOURS/LANDINGS LOGGED SINCE DEPLOYED	3. DAY - HOURS/LANDINGS LOGGED LAST 30 DAYS
4. INSTRUMENT HRS. LOGGED SINCE DEPLOYMENT	5. NIGHT - HOURS/LANDINGS LOGGED SINCE DEPLOYED	6. NIGHT - HOURS/LANDINGS LOGGED LAST 30 DAYS

PART II - MAINTENANCE, MATERIAL AND FACILITIES DATA

SECTION A - AIRCRAFT AND ENGINE DATA

1. A/C HISTORY

DATE OF MANUFACTURE	SERVICE TOUR	MONTHS IN THIS TOUR	TOTAL NO OF OVERHAULS	FLIGHT HRS. SINCE LAST OVERHAUL	FLIGHT HRS. SINCE ACCEPTANCE	TYPE CHECK LAST PERFORMED	FLIGHT HOURS SINCE LAST CHECK	NO. OF DAYS SINCE LAST CHECK
12/31/59	2	16	1 PAR	311.9	869.3	3RD MAJOR	2.0	4

2. ENGINE HISTORY

	DATE	ENGINE MODEL	ENGINE SERIAL NO.					
1	5/19/55	J65W16A	610515	4	120.3	657.8	2ND MAJOR	2.0	4
2									
3									
4									

3. GENERAL

a. DID FIRE OCCUR? ☐ BEFORE ACCIDENT ☒ AFTER ACCIDENT ☐ DID NOT OCCUR

b. DID EXPLOSION OCCUR IN FLIGHT? ☐ YES ☒ NO

c. CHECK IF APPLICABLE ☐ AMP FUR SERIAL Na

d. HAS DIR BEEN REQUESTED? ☐ YES ☒ NO

e. FAILED COMPONENTS INVOLVED: Suspect Fuselage Fuel Cell Failure

4. MAINT. AND ENG. FACTORS

CHECK ITEMS PRESENT IN THIS ACCIDENT

a. ☐ A/C DESIGN
b. ☐ A/C EQUIPMENT
c. ☐ MAINTENANCE
d. ☐ UNDETERMINED
e. ☐ TECHNICAL INSTRUCTION
f. ☒ OTHER *(Specify)* Fuselage fuel cell shows activation separation, deformation.
g. ☐ SURFACE FACILITIES
h. ☐ HUMAN ENGINEERING *(e.g., Cockpit configurations, etc.)*

5. OTHER DATA

a. ALTITUDE AT MALFUNCTION	b. AIR SPEED	c. OPERATING TEMP	d. WEIGHT OF A/C	e. C.G. (% MAC)	f. KIND OF FUEL	g. FUEL PRESSURE
20,000	410 Kts.	NORM	18,000	NORMAL	JP-5	NORM

h. EVIDENCE OF FUEL CONTAMINATION: NONE

i. CAUSE OF ENGINE FAILURE OR FLAMEOUT: Suspect Fuel Starvation

j. FUEL CONTROL REGULATOR/CARBURETOR *(List stock and ser. nos., give time since new or overhauled)*: R2-2915-747-2680-NBPD/66.5 Hrs PN-330541-1

k. EXTERNAL STORES ABOARD A/C: 2 300 gal tanks 1 center-line practice bomb rack with 4 MK89 practice bombs

(If additional space is necessary, attach additional sheets)

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D

OPNAV FORM 3750-1 (Rev 12-59)
PAGE 3

AIRCRAFT ACCIDENT REPORT

OPNAV REPORT 3750-1

PART II — MAINTENANCE, MATERIAL AND FACILITIES DATA (Cont'd)

SECTION B — FACILITIES DATA

1 GENERAL - √ BASIC FACILITIES INVOLVED. DESCRIBE EFFECT ON ACCIDENT IN THE ANALYSIS SECTION OF THE REPORT

	a. CLEARANCE AUTHORITY		i. WATER LANDING AREA		q. CRASH AND RESCUE
	b. FLIGHT PLANNING INFORMATION SOURCE		j. APPROACH ZONE		r. SEARCH AND RESCUE
	c. LANDING AIDS (GCA, CCA, ILS, etc.)		k. END ZONE (Over run)		s. CATAPULT
	d. TRAFFIC CONTROL TOWER (Field or Ship)		l. SHOULDERS		t. ARRESTING GEAR (Carrier)
	e. APPROACH AND ENROUTE AIDS TO NAVIGATION		m. TAXIWAY		u. BARRIER OR BARRICADE (Field or Ship)
	f. RUNWAY WATCH		n. PARKING AREA		v. FLIGHT DECK
	g. LANDING SIGNAL OFFICER		o. EMERGENCY ARRESTING GEAR (Runway)		w. MIRROR
	h. RUNWAY		p. A/C SERVICING, HANDLING AND DIRECTING (Field or Ship)		x. OTHER (Specify)

a. EQUIPMENT INVOLVED: ☐ CATAPULT ☐ ARRESTING GEAR | b. PRESSURE SETTINGS | c. WIND OVER DECK | d. RELATIVE HEADWIND | e. APPROACH SPEED (SPN - 12 READING)

f. MARK NUMBER | g. MODEL NUMBER | h. LOCATION ON SHIP | i. LAUNCHING BRIDLE AND CONFIGURATION USED

j. CATAPULT / ARRESTING GEAR BULLETINS OR NOMOGRAMS USED

2 SHIPS DATA

K. THIS PORTION SHALL BE COMPLETED WHENEVER (1) A MAJOR AIRCRAFT ACCIDENT INVOLVES ARRESTING GEAR, BARRIER AND/OR BARRICADE EQUIPMENT, OR (2) AN AIRCRAFT ACCIDENT INVOLVES MALFUNCTIONING OF ARRESTING GEAR, BARRIER AND/OR BARRICADE EQUIPMENT. MINOR ACCIDENTS OR ROUTINE DAMAGE TO CABLES, WELDINGS AND OTHER EXPENDABLE COMPONENTS NEED NOT BE REPORTED.

ENGAGED	DECK RUNOUT (FT.)	RAM TRAVEL (IN.)	CONTROL VALVE SETTINGS: CONSTANT PRESSURE DOME (P.S.I.)	CONSTANT PRESSURE RATIO	CONSTANT RUNOUT (WT. LBS.)	ACCUMULATOR PRESSURE (PSI)	COMMENTS (For cable failure specify number of landings and months in service)
DECK PENDANT							
DECK PENDANT							
BARRIER							
BARRIER							
BARRICADE							

PART	SECTION	ITEM

PART III REMARKS (Continue on additional sheets)

Claim has not yet been presented to the NAF El Centro Legal Officer

COPY DISTRIBUTION
2CC. NAVAVNSAFECEN DIRECT
1CC BUWEPS DIRECT
1 COMFAIRSDIEGO
1 COMNAVAIRPAC
1 CINCPACFLT
1 COMOPTEVFOR
1 BUWEPSREP LBEACH
1 VA-125
1 NAVPGRAFAC

COST DAMAGE TO: GOVERNMENT PROPERTY $ | PRIVATE PROPERTY Amount unknown | DATE SUBMITTED TO C. O. 18 OCTOBER 1962

PART IV - SIGNATURES OF THE BOARD

SENIOR MEMBER (b) (6) LCDR (b) (6) AIR WARFARE OFFICER UNIT BILLET

MEMBER (b) (6) LT (b) (6) WEAPONS OFFICER UNIT BILLET

FLIGHT SURGEON MEMBER LT (b) (6) (MC) (b) (6)

MEMBER (b) (6) LT (b) (6) SAFETY OFFICER UNIT BILLET

LCDR (b) (6) MAINTENANCE OFFICER (b) (6)

3

PART V- The accident

CDR (b) (6) was assigned A4D-2N BUNO 145066 (MYSTIFY 2) on 25 September 1962 for an authorized project flight concerned with the prosecution of CNO assigned project Op/V269. Origin of the flight was NAF, China Lake, Calif., and the flight mission called for glide bombing on target 103A located in the vicinity of NAF, El Centro, Calif. and on target "Candid Camera" in the Yuma, Arizona Area

CDR (b) (6), flight leader and LT (b) (6) wingman, conducted a mission brief and received a meterological brief prior to take-off.

The pilot, CDR (b) (6) conducted a normal pre-flight of the assigned airplane. External configuration of the airplane was two full 300 gallon drop tanks and a centerline practice bomb rack with 4 MK 89 practice bombs (56# weight each).

Take-off was made at 1318 PDT followed by the wingman in MYSTIFY 8, an A4D-2N. After a running rendezvous the flight climbed out on course toward the El Centro target. En route cruise was made at 20,000 feet, 0.68 Mach. Weather en route was generally clear.

As the flight passed about 5 miles to the west of Thermal Vortac the wingman noticed fuel streaming from the lead airplane. The time was approximately 1345 PDT. The flight leader was informed of the situation and turned the drop tank transfer switch off as it is not unusal for A4D type airplanes to vent some fuel overboard when transferring fuel from the drop tanks to the wing tank. After another 30 seconds had elapsed the wingman reported the overboard fuel flow rate increasing. The wingman moved beneath the lead airplane for closer examination and observed fuel streaming out heavily around the centerline bomb rack The wingman checked the right side of the airplane and reported fuel streaming along the wing root. The port side was also checked but there was no visible fuel stream on that side. However, it is noted that from this position the wingman was looking directly into the sun.

When the fuel streaming had been reported to the pilot his internal fuel reading was at 5,300 pounds, having commenced fuel transfer from the drop tanks at an indicated internal fuel reading of 4,500 pounds. There was at this time, approximately 6700 pounds total fuel aboard. After securing the drop tank transfer the internal fuel reading was down to 5,00 pounds. As the internal fuel indication continued to decrease the pilot then resumed transfer from the drop tanks. The internal fuel reading was now at 4,700 pounds The flight commenced descent in order to get below the scattered to broken stratus clouds in the El Centro area. Bases of the clouds were at approximately 6,000 feet During this time an attempt was made to contact El Centro on 340.2MC. This effort was not successful so the flight switched to 243.0 MC (GUARD) and contacted El Centro Tower. The transcript of the Guard transmission is included as enclosure (5). By the time the tower was contacted, indicated internal fuel quanitity was at 4,000 pounds. This reading indicated

a loss of at least 1,300 pounds of fuel in less than 2 minutes. Immediately thereafter the indicated internal fuel reading dropped to 1,000 pounds and the engine flamed out. The flight had been informed by El Centro tower of the duty runway, wind and altimeter setting when the flight leader reported the flame-out and that he could not obtain a re-light. The indicated internal fuel quantity remained at 1,000 pounds, fuel flow was zero and the RPM was at START. The pilot attempted a re-light on MAIN generator and PRIMARY fuel control which was unsuccessful. Electrical power was lost during re-light attempt The drop out generator was deployed, electrical power regained and the wingman informed of the flame-out. Two more re-light attempts were made in MANUAL fuel control; however no fuel flow could be obtained and the throttle was out of the OFF position. The internal fuel quantity indicator remained at 1,000 pounds and at no time was a Fuel Transfer Warning light or Fuel Boost Pump failure noted. The flame out occurred at approximately 15,000 feet. After the three unsuccessful re-light attempts the pilot decided to eject, and informed the wingman of his intention. The last noted altitude by the pilot prior to ejection was 7,000 feet and airspeed at 280 KIAS. The airplane was pointed toward open fields, some nose-down trim applies to the airplane followed by ejection through actuation of the face curtain. The ejection was about 2 miles south of the south shore line of the Salton Sea.

The ejection sequence appeared to be normal and the wingman made a MAYDAY report. The parachute opening was normal although the pilot did have a "line over" (riser line over the parachute canopy). The pilot made one attempt to correct the "line over" which was unsuccessful. He released the left leg strap of the survival gear and then pulled the manual D ring of the parachute during descent to insure separation from the parachute canopy after landing.

During descent the wingman maintained visual contact with the parachute and established radio contact with a Coast Guard UF that was in the immediate area. The UF was given the location of the pilot by the wingman and coupled with the signal of the PRT-3 beacon, the UF was able to arrive on the scene and sight the parachute before the pilot had landed.

The pilot landed on the edge of an irrigation ditch with greater force than anticipated He released the rocket jet fasteners after impact and was not dragged by the parachute. Impact with the ground caused pain in the right foot of the pilot and winded him. He stood up on one leg after releasing the parachute and waved to the wingman.

Within 15 minutes a jeep arrived on the scene and the pilot was taken to a farm house, He transferred to a California Highway Patrol car and was driven to NAF, El Centro.

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PART VI - Damage to Aircraft

The airplane suffered total destruction (see enclosure (8) (9) and (10)) as a result of initial impact and resultant fire. Airplane attitude at impact is estimated to have been 110° right wing down and 15° nose down, with the right wing tip contacting the ground first. Aircraft heading at impact was approximately 133°.

The main dispersal of the wreckage was scattered beyond the impact point covering an area of approximately 1000 feet in length and 450 feet in width; isolated parts were found as far as 2000 feet from the impact point. The impact crater was approximately 56 feet in length in a southeasterly direction, 24 feet in width, and varied in depth from negligible at initial impact at the northern end to 9 feet in depth at the southern end.

Due to total destruction of the aircraft, salvage of components was not feasible.

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13

PART VII - The Investigation

The initial phase of the investigation commenced with the arrival of the VX-5 Saftey Officer and Flight Surgeon at NAF, El Centro approximately three (3) hours after the accident. Initial questioning of the pilot was accomplished and arrangements made for photographic and guard services at the crash site.

Investigation of the crash site commenced on the following morning and preliminary effort was directed toward mapping the area and locating major aircraft components plus all components associated with the fuel system. This map is included as enclosure (6). The investigation was aided by Mr. (b) (6) of Douglas Aircraft Company and Mr. (b) (6) of Curtiss-Wright Corporation. LCDR (b) (6) of the Safety Center was also present. At the same time, a canvas of adjecent dwelling sites was made to locate witnesses. The area in which the pilot landed was surveyed by jeep and by air in an effort to locate the canopy and ejection seat. Thorough search of the field and manual excavation of the impact hole yielded approximately 70% of the bottom and top areas of the fuselage fuel cell, sections of the fuel boost pump and most of the fuel line fittings.

On 28 September, clean-up of the crash site was made by a crew from NAF, El Centro and the debris unloaded in the NAF salvage yard. This debris was searched again for additional parts.

The results of the investigation in the El Centro area ascertained that:

(1) No ground eye witnesses to the actual ejection and subsequent impact of the airplane could be located.

(2) No indication of in-flight fire could be found. (Portions of the fire detection system were recovered and were properly assembled).

(3) The ejection seat and airplane canopy could not be located. Civil law enforcement agencies were alerted and requested to notify NAF, El Centro in the event that information materialized regarding either location of the canopy and ejection seat or eye witnesses.

(4) Examination of the recovered fragments of the fuselage fuel cell indicated fuel activation of parts of the bottom of the fuel cell prior to impact.

All recovered fuel system components were taken to Douglas Aircraft Company at Long Beach for assembly and analysis. Douglas Aircraft and Firestone Rubber provided engineering assistance for laboratory analysis and reconstruction of the fuselage fuel cell. The result of these steps are summarized as follows:

14

(1) That fuel activation and tank separation of portions of the lower fuselage fuel cell was confirmed as having occurred prior to the accident.

(2) That deformation of the fuel cell in the boost pump area indicated that the aft portion of the boost pump was sagging approximately one inch.

(3) That the fuel filter circumferential weld was broken.

(4) That material found in one of the fuel pump passageways was fiberglass.

(5) That no foreign material was found in the Fuel Filter.

An investigative trip was made to the O & R facility at NAS Alameda to trace the history of this particular fuselage fuel cell. History determination was not possible; however, the aircraft did receive a reworked fuel cell during the last PAR period. It is to be noted that fuselage fuel cells and backing boards are not always removed during a PAR period.

The aircraft did not have the following service changes incorporated:

66A Engine Accessories-Modification of The Engine Intake Air Duct Seal

118 Engine Accessories-Provisions For Pressure Filling 4 Gallon Oil Tank.

149 Armament-Installation of Aero 3A Fuze Power Supply with ASM-N-7

156A Furnishings-Provisions for Thermal Radiation Closure

163 Electrical-Addition of Aft Antennas for IFF and TACAN

171 Electrical-Modification of the Gun Charging Circuit

172A Fuselage-Installation of JATO Provisions

177A Armament-Installation of Bull-Pup Transmitter Circuit Time Delay

181 Electrical-Installation of Anti-Collosion Beacon

183 Hydraulic System-Modification of Catapult Hooks

184A Armament-Installation of Ammo Link & Brass Chutes

186 Avionics-Installation of Provisions for TPQ-10 Ground Control Bombing System.

188A Avionics-Installation of Remote AN/ARC-27 Indicator

200-2 Avionics-Installation of Radar Altimeter and Bearing, Distance and Heading Indicator

201 Electrical-Change to Primary Electrical Power Distribution System

203 Avionics-Installation of Sidewinder Capability

206 Hydraulic System-Installation of Fire Protection Spray Shield

207 Electrical-Modification of boost Pump Circuit

215 Fuel System-Removal of Fuel Cell Baffles

217 Instruments-Installation of Elapsed Time Clock Provisions

218 Electrical-Installation of Electric Windshield Wiper

219 Avionics-Installation of Remote Attitude Indicating System

220 Avionics-Modification of Angle of Attack Transducer

221 Electrical-Installation of Cockpit High-Intensity Floodlighting

222 Nose Landing Gear-Mod of Fuselage Fuel Tank Rupture Prevention

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PART VIII - The Analysis

a. Personnel Factors.

Investigation and analysis of the events prior to, during and following loss of fuel, flame-out and subsequent ejection reveal no contributing personnel factors. There was no prior condition discovered in the pilot's examination of the airplane or post start airplane check that would give warning of the events to follow. The airplane operated and functioned normally until the fuel streaming was reported by the wingman. An emergency situation developed when the fuel loss could not be controlled. The pilot and wingman recognized the situation as cause for an immediate landing. Action of the pilot to resume transfer following the rapid loss of fuel was proper. Establishment of communications with El Centro Tower and the let-down to get beneath the partial cloud layer in the El Centro area was sound operating procedure. It is noted that the first re-light attempt did not comform to procedures outlined in the A4D-2N Flight Manual NAVWEPS 01-40AVB-1 dated 1 December 1960, revised 15 July 1962. The procedure specified requires that the emergency generator be EXTENDED and the fuel control be in MANUAL for an airstart. The pilot was aware of this procedure and the procedure was outlined on his emergency knee board card. The following two airstart attempts were in accordance with prescribed procedures. However, the fact that no fuel flow could be obtained during the airstart attempts precluded an airstart regardless of procedure employed. The steps followed by the pilot in pointing the airplane toward open fields, introducing nose-down trim to the airplane and placing the feet firmly on the rudder pedals prior to ejection are indicative of the professional aviator. The pilot's action during descent in partially releasing the survival gear and pulling the manual D ring of the parachute also reflect calmness and proper training. The "line over" on the parachute canopy caused the pilot some concern. Liasion with the Naval Parachute Facility revealed that the "line over" phenomenon will occur about 2% of the time and is not a result of improper parachute packing procedure. NPF personnel also indicated that a "line over" does not increase parachute sink rate measurably. The situation can be corrected by "climbing up" the affected shroud line but reluctance of the pilot to do so is understandable. The injury sustained in landing was the result of impacting on the edge of a ditch and in all probability could not have been avoided.

b. Supervisory Factors.

None

c. Material Failures and Malfunctions.

(1) Main Fuselage Fuel Cell.

The main fuel cell, manufactured by the Firestone Rubber Company, was installed in BUNO 145066 during the PAR, March 1961. PAR rework records show that this tank had been reworked by NAS Alameda O/R prior to installation.

Aporoximately 75% of the bottom of the fuel cell was recovered. The recovered portion of the cell is depicted by white chalk. (See enclosure 11).

During the investigation t AAR board, aided by DAC engineers and the Firestone Company represe ive reassembled the recovered portion of the fuel cell in an effort to determine if the main fuel cell had failed in any way.

Examination of the bottom of the cell revealed several areas of activation, one large area of tank separation and one area of deformation. (see enclosures(12-17)). From pieces of the fuel cell it was determined that only the activated (fuel soaked) areas had burned. Enclosures (12&13) clearly shows that the fuel cell did not burn beyond the activated area.

An activated area is that portion of the fuel tank which has had the self sealant section of the tank activated by the airplane fuel. Only the inside of the tank has a fuel proof layer of material; thus, for activation to start from the inside, this fuel-proof layer must be damaged/broken by some method. Because the outside layer does not have a fuel proof layer, fuel can penetrate the outer portion of the tank and activate the self sealant, thus causing a raised portion (ply separation) on the inside of the cell (see enclosure (15)).

The bottom of the fuel cell, from the fuel boost pump aft, shows signs of heavy permanent deformation (see enclosures (13 & 14)) while from the fuel boost pump forward there are only signs of activation and separation (see enclosures (13 & 15)).

From the previously cited signs of deformation the aft portion of the fuel boost pump appears to have sagged approximately one inch, (see enclosures (16 & 17)).

A faulty patch was found on one section of the cell wall. This wall damage had apparently been caused by a previouslyinstalled metal baffle plate. Although the edges of this patch had come loose, the damaged area was still covered. This defect was in no way a cause factor in this accident.

(2) Fuel Filter. The fuel filter was recovered by digging in the forward area of the impact crater; however, the filter clamp and cover plate were not found. The filter was taken to the NAF, El Centro, California Machine Shop and cut open. On examination, the fuel filter element showed no signs of contamination. Portions of the fuel filter elements were later examined by DAC Chemists and found to have no foreign material trapped in them. Having just completed a major check, the fuel filter element had been replaced approximately two flight hours prior to the crash. The fuel filter case circumferential weld (located at the cover plate retaining clamp end of the fuel filter) was found broken. The weld and weld break were analyzed by DAC engineers and determined to have been broken on impact, with the filter cover plate in place at the time of impact.

(3) Engine-Driven Fuel Pump. On disassembling the fuel pump, a "wad" of foreign material was found in one of the two fuel pump passageways located down stream of the pump gears. The foreign material, after examination by DAC chemists, was determined to be a glass substance similar to that used

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18

in cockpit padding. The foreign material also contained mud and clay similar to that found at the crash site. This, in addition to the fact that no foreign material was found upstream in the fuel filter and that it is a physical impossibility to pass this "wad" through the fuel filter into the pump, helped determine that the FOD material was injected into the pump as a result of impact.

(4) Fuel Flow Dividers. The fuel flow divider filters were examined by DAC chemists and found to contain only sand and clay similar to the ground at the crash site.

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Part VIII, The Analysis

d. Facilities

The rapid response of the Coast Guard UF to the MAYDAY report was outstanding. Prompt acquisition of the pilot by the Coast Guard Crew was facilitated by the wingman's presence and the successful operation of the PRT-3 Beacon. Recovery of the pilot was effected by a civilian in a jeep type vehicle. Transfer of the pilot to a California Highway Patrol car was made at a farm house located approximately one mile from the landing area of the pilot. The pilot elected to remain in the Highway Patrol car for the trip to NAF, El Centro in lieu of transferring to the Navy Ambulance since the patrol car was air conditioned.

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Part IX - Comment and recommendations

The most probable cause of this accident was a failure or rupture of that portion of the bottom of the fuselage fuel cell containing the fuel boost pump. Initial rupture of the tank caused the overboard fuel flow noticed by the wingman. Further failure of the fuel cell caused by the velocity of the escaping fuel caused the collapse of the main cell sump bulkhead supported only by the five (5) nylon stiffeners. The center portion of this bulkhead draped over the fuel boost pump resulting in closing of the two center flappers. The four outer flappers were closed by contact with the outer walls of the main fuel cell. The engine flamed out when the sump compartment emptied of fuel. The indicated 1000 pounds of fuel reflected only the quantity remaining in the fuselage cell which had been trapped when the sump bulkhead collapsed,.

A potential cause of chafing and deformation of the fuselage fuel cell bottom is installation of the fuel Boost pump bracket assembly in an inverted position. One squadron A4D-1 was found to have this "inverted" installation after all squadron airplanes had been subjected to a fuel cell and cell support inspection following the accident. This A4D-1 nad completed PAR in August 1961.

It is recommended that all A4D fuselage fuel cells be removed at every PAR period and be thoroughly inspected. It is further recommended that consideration be given to increasing the width of the fuel boost pump bracket (Part No. 3665809) for increased support for the fuel cell in this area.

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OPNAVINST 3750.6D

STATEMENT OF CDR (b) (6) CONCERNING ACCIDENT INVOLVING A4D-2N BUNO 145066

I inspected aircraft BUNO 145066 A4D-2N prior to take-off on a routine bombing mission and found no discrepancies. Both external tanks were full and total fuel was 9400 pounds. All press to test lights were working. I made my take-off at about 1318 which was uneventful. Climb out was made at 310 knots to 20,000 feet. I cruised at 20,000 feet, .68 mach, 94% AND fuel flow was about 3000 pounds per hour. I started fuel transfer at 4500 pounds indicated fuel. The fuel gauge went up to 5300 pounds and remained there. My wingman and I were homing on the Thermal VORTAC and about 30 minutes out from China Lake when he reported that I was losing fuel. Thinking that I might be overflowing due to fuel transfer I shut off my transfer pressure switch. My wingman then reported that I was still losing fuel and that it was coming from my wing roots. My fuel gauge had dropped to 5000 pounds by this time. I told my wingman that my fuel was dropping and that I would try to go into El Centro. The fuel was then noted to be 4700 pounds. I turned the pressure switch back on to attempt to transfer more fuel into my main tank. We then switched to Channel 2 and attempted to get El Centro tower. I could not get the tower on Channel 2 so switched to GUARD. My fuel then was reading 4000 pounds. My wingman contacted El Centro Tower and cleared me for a straight in approach.

My fuel went to 1000 pounds and I told my wingman that I didn't think I could make El Centro. The engine then flamed out. The altitude was approximately 15,000. Fuel quanity was still 1000 pounds, fuel flow was 0 and the RPM was at START. I tried to re-light using main generator and primary fuel control which was unsuccessful. I lost electrical power during the re-light attempt. I pulled the emergency drop out generator and regained electrical power. I called my wingman and told him

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22

that I was flamed out. Then I went to manual fuel control and made two re-start attempts with no luck. Fuel quantity still read 1000 pounds and I do not remember seeing the fuel transfer light on.

I then told my wingman that I was going to eject after I had descended below the clouds and when not over the lake. Just before I ejected I noted my airspeed was about 280 knots and my altitude was about 7,000 feet. Just prior to ejection I pointed the airplane toward some open fields and trimed nose down. I told my wingman that my feet were on the rudder pedals and "adios". I pulled the curtain with both hands and was ejected with no problems. Seat separation went as advertised and the parachute deployed on schedule. Everything seemed normal except that I seemed to have two small parachutes instead of one. I guess a shroud line was over the top of the chute. I was swinging back and forth and I pulled on one of the risers to stop this but one side of the chute acted like it was going to dump so I stopped pulling on the riser. I released the left leg strap and the survival gear swung to my right side. When I got near the ground I held on to the risers and put my legs together. My rate of descent seemed quite rapid during the last couple of seconds. I was going to try to roll on impact and release the quick disconnects as soon as I hit; however, I hit so hard I didn't even move from point of impact. I could not breath and my right foot hurt quite a bit. I got on my knees and released the risers as soon as I could. The surface wind was calm and I was not dragged. I then stood on one leg and signaled my wingman that I was okay. I was picked up by a farmer and transferred to a police car for the trip to NAF, El Centro.

I do not know how this accident could have been prevented or foreseen.

(b) (6) [redacted]

23

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PP RUCKDE RUCKDE RUWDAF RUWDAG RUWDKM
DE RUWDKK 95
ZNR
P 260350Z
FM AIRDEVRON FIVE
TO NAVAVSAFECEN NORVA
INFO COMOPTEVFOR
DEPCOMOPTEVFORPAC
COMNAVAIRPAC
COMFAIRSDIEGO
BUWEPSREP DOUGLAS, LBEACH
BT
UNCLAS
SUBJ ACFT ACDT REPT
A. A4D-2N X 145066 X VX-5
B. 251356 X 15 MILES 340 RADIAL ALF EL CENTRO, CALIF
C. 1K BOMBING X VFR NAF CHINA LAKE TO NAF CHINA LAKE X .5
D. ALFA X TOTAL DISTRUCTION ON IMPACT WITH LEVEL GROUND
E. FLAME OUT X EJECTION
F. DURING STRAIGHT AND LEVEL FLIGHT AT 20,000; .68 MK,
WINGMAN RPT A GUSHING OF FUEL FROM THE AIRPLANCE IN THE VICINITY
OF THE CENTER PILON. SIMULTANEOUSLY THE PILOT NOTED THE FUEL

PAGE TWO
QUANITY INDICATOR DROPPING RAPIDLY. AS THE INDICATOR PASSED
THRU 1000 LBS THE ENGINE FLAMED OUT. NO LOW FUEL WARNING LIGHT
WAS NOTICED. PILOT DROPPED EMG GEN. TWO UNSUCCESSFUL RELIGHTS
WERE ATTEMPTED. PILOT EJECTED AT ABOUT 6000 FT. AIRPLANE WAS
CONFIGURED WITH TWO 300 GAL DROP TANKS. 6 MK 89 MOUNTED ON CENTER
LINE AERO 4A BOMB RACK. TOTAL FUEL ON BOARD ABOUT 7500 POUNDS
G. (b) (6) CDR (b) (6) USN 1310 ACTIVE X EJECTION 6000
FT X 280 KTS IAS X NB9 PARACHUTE X RAPEC SEAT X MINOR
H. NONE
I. 4500 SCAT, 9000 SCAT, USBY 20, WIND SSE 8 TEMP 93 DEW PT 66.
J. NONE
K. NO
L. NO
M. RAPEC X ONE SHROUD LINE OVER CANOPY CAUSED RAPID DECENT.
N. NONE
O. NA
P. IMPACT AREA APPROX 100, X 100, IN MIDDLE OF 80 ACRE
CULTIVATED FIELD
BT
26/0348Z

RUWN26/0414Z SEP 62 FB

R NR 011 DH

VX-5 DE AD NR 15/26

RKK046
CXA046
PP RUWDKK
DE RUCKDG 19
ZNR

P R 260432Z 2 6 0 4 3 2 Z PRIORITY/UNCLAS

BT
UNCLAS
LCDR (b) (6) (b) (6) USN CLRD TOP SECRET WILL ARRIVE EL
CENTRO 26 SEP TO CONDUCT SAFECEN INVESTIGATION OF A4D-2N
BUNO 145066. REQ BOQ AND TRANSPORTATION
BT
26/0430Z

TOD 26/0540Z SEP 62 FB
AD DE AF R NR 15 DH

VX-5 DE AD NR 09/26

YKK003
AGA064
PP RUWDKN
DE RUWDAG 065
ZNR
P 260315Z
FM COMNAVAIRPAC
TO BUWEPSREP LBEACH
INFO AIRDEVRON FIVE
NAF EL CENTRO
BT
UNCLAS
A4D BUNO 145066 ACCIDENT
1. REQ SERV DAC ACCIDENT INVESTIGATOR MR [redacted] ASSIST AS
REQR INVESTIGATE SUBJ ACCIDENT. REQ HE CONTACT LCDR [redacted] LT
[redacted] VX-5 NAF EL CENTRO ASAP 26 SEP.
BT
26/0315Z

TOD 26/0330Z SEP 62 JC
R NR 09 DH

VX DE AD NR 12/16

MM RUUDAG
DE RUUDKK 16
ZNR
M 161616Z
FM AIRDEVRON FIVE
TO COMNAVAIRPAC
BT
UNCLAS
1. REQ SEVEN WORKING DAY EXTENSION ON VX-5 AAR 1-62 BUNO 145066 DUE TO EXTENSIVE INVESTIGATIVE EFFORT CONDUCTED AT PAC, LONG BEACH.
BT
16/1616Z

TOD 16/1900Z OCT 62 NW

DE AF R NR 12 LW

VX DE AD NR 17/17

RKKØ66
AGAØ87
MM RUUDKK
DE RUUDAG 78
ZNR
M 171811Z
FM ADMIN COMNAVAIRPAC
TO AIRDEVRON FIVE
INFO COMNAVAVNSAFECEN
BT
UNCLAS
YOUR 161616Z. EXTENSION GRANTED.
BT
17/1811Z

TOD 17/19Ø9Z OCT 62 NU

DE AF R NR 1 7 HK

Statement of LT (b) (6) USN, (b) (6) concerning accident involving A4D-2N BUN 145066

At approximately 1315, 25 September 1962, CDR (b) (6) in XE-2 (145066) and I departed NAF, China Lake on a scheduled flight to the Yuma target complex. At approximately 1345, we were proceeding at 20,000 feet heading 130° M approximately 5 miles west of Thermal Vartoc when I noticed fuel streaming from the lead airplane. It started suddenly and appeared to be excessive for overboard dump associated with fuel transfer from the drop tanks.

I called XE-2 and informed him of the condition, he acknowledged by switching his transfer switch off. After 30 seconds, I reported that the fuel stream was increasing and that it looked like a fuel leak. I moved in under XE-2 and observed fuel streaming out heavily around the centerline bomb rack. I reported to XE-2 that he may have lost the plug in the rack and better head for a field. I moved over to the right side of XE-2 and reported fuel streaming along the wing root. On checking the port side of the airplane, there appeared to be no leak on that side. We started descending at this time.

CDR (b) (6) acknowledged saying he had 4000 lbs and was headed for El Centro. We switched to 340.2 MC and attempted contact with El Centro tower; XE-2 first with no results and I second with negative results. I told XE-2 I was switching to Guard frequency, he acknowledged. El Centro tower came up on Guard after one call, was informed of problem and rogered duty Runway 8. At this time, I heard XE-2 reported "1000 lbs". I relayed El Centro duty Runway and "standing by", and noticed XE-2 dropping back. We were passing through approximately 10,000 feet at this time.

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I dropped speed brakes to get back alongside XE-2 and heard 'Mayday, flamed out, I don't think I can get it started again". I rogered. CDR (b) (6) called "I'm getting out, got my feet on the pedals, keep me in sight". I rogered, and reduced power further as I still had not gotten abeam of XE-2. At the time of ejection, I had a clear view of the aircraft, my position being slightly ahead and about 500 feet to the starboard side. I observed the canopy jettison, followed very closely by the seat. The seat and pilot separated and the parachute opened shortly thereafter. The ejection sequence appeared normal in every respect. The PRT-3 beacon began "beeping" loud and clear. I commenced a tight port orbit around the descending parachute and called 'Mayday" - giving approximate position of crash. Several other stations acknowledged including El Centro and a UF in the area. I estimate our altitude at time of ejection was between 5 and 8 thousand feet. The UF called in, saying he had a puff of smoke in sight but nothing else. I gave him my position relative to the smoke. The UF acknowledged that he had me in sight. I reported the parachute's position in the center of my orbit and he rogered saying he had it in sight. At this time, I was at one thousand feet and saw the UF come across the shoreline of the Salton Sea from the north at a lower altitude. I observed the pilot land near a dirt road about a mile and a half south of the Salton Sea about one mile east of U.S. Highway 99. The UF was orbiting at about 100 feet and made repeated low passes over the pilot initially reporting to El Centro tower that the pilot appeared in good condition with the exception of an injured leg. The parachute was on the ground next to the pilot - the PRT beacon was still broadcasting loud and clear.

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During the parachute's descent, I looked to the south to see where the airplane had crashed and observed a thin column of smoke below a large puff of smoke over the crash site. I missed the actual impact by several seconds. The crash was in the middle of a field and did not appear to have been close enough to any roads or buildings to have caused any damage. I did not pay any more attention to the crash site until I was leaving the area later.

I circled the pilot on the ground at 1500 feet, the UF did the same at about 300 feet. Approximately 15 minutes later, an old car or jeep came up the dirt road and the pilot with parachute got into this vehicle and proceeded toward another dirt road towards a farm house. The UF stayed with this car orbiting overhead. I called XE-9, another squadron plane in the vicinity, and was told that the pilot was being taken to the town of Westmoreland for pick-up.

I made one pass over the crash sight observing a hole in the ground with twenty or more people milling around it.

I then proceeded back to NAF, China Lake.

I have been a designated Naval Aviator for five years and have 1500 flight hours, 850 in A4D-type aircraft.

(b) (6) [redacted]

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Tape Recording of A4D BuNo 145066, Pilot Cdr. (b) (6) VX-5, Recorder No. 5

Frequency 243, Omc Tape time 1251, NAF El Centro tower.

1251	Mystify 8	El Centro Tower, El Centro Tower, Mystify 8 on Guard over.
	NJK Tower	Mystify 8, Tower go ahead
	Mystify 8	This is Mystify 8 in company with Mystify 2 ALPHA 4 DELTA, Mystify 2 has a bad fuel leak, he's down to 1000 pounds and he's trying to make a stright in to your field. Were over the Salton Sea at this time, we'd like immediate clearance direct to your field, over.
	NJK Tower	Mystify 8 roger, our duty runway is runway 8 wind Southeast 5, altimeter 2983, report when closer to the field.
	Mystify 8	Thank you
	Mystify 8	Mystify 2 from 8, your cleared direct to El Centro its runway 8 the duty runway.
	NJK Tower	Mystify 8 El Centro.
	Mystify 8	El Centro standby, Mystify 2 this is 8 your cleared direct El Centro, over.
	Mystify 2	This is Mystify 8 I've flamed out, can't get a relight I'm gonna bail out.
	Mystify 8	Ah roger.
	Mystify 2	Uh you got me in sight
	Mystify 8	I have you in sight
	Mysitfy 2	Ok, I'm gonna un pull the curtain, I've got my feet on the - - - - -Adios.
	NJK Tower	8, This is El Centro you got time to give me a position.
	Mystify 8	Roger, mayday mayday uh pilot of Mystify 2 has bailed out.
	NJK Tower	This is El Centro, have you got time to give me a approximate location.
	Mystify 8	Right, about uh 3 miles South of the uh Salton sea uh my Tacan is not working at this time I'm in the area.

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(1)

NJK Tower	Roger 8, do you have fuel to orbit the area.
Mystify 8	Thats affirmative lots of fuel uh his beacon is working at this time, do you hear it on Guard.
NJK Tower	Thats affirm, we are copying his uh PRT-49 and remain in the area, we'll have aircraft on the way.
Mystify 8	8 Wilco
NJK Tower	Standby this frequency we'll be up this frequency also for any further instructions from you.
Mystify 8	Unknown (Right or Roger).
Mystify 8	Go ahead ---- I can't hear you, the PRT is drowning you outplease --- say again.
NJK Tower	Coast Guard 7226, Coast Guard 7226 this is El Centro on Guard if you hear give El Centro a call on 360.2.
NJK Tower	Coast Guard 7226, Coast Guard 7226 this is El Centro if you hear, give us a call please 360.2.
CG 7226	El Centro, Coast Guard 7226 on Guard.
NJK Tower	7226, El Centro did you copy the mayday.
CG 7226	That is affirmative, I have a, I'm off the water at El Centro, will procede to the South end. I have one bit of smoke in fromt of me, do you have amplifing information.
NJK Tower	Mystify 8, Centro are you uh copying this.
Mystify 8	Thats affirm, this is 8, the parachute is coming down just to the Northwest of that puff of smoke.
CG 7226	Roger, understand, just to the Northwest of that puff of smoke. I'll keep my eye for it uh, I'm a uh UF type of aircraft.
Mystify 8	Roger, I'm at 1800' he's right now over highway 99 just south of the Salton Sea.
CG 7226	Roger, I have you in sight, are you circling him in a left hand turn.
Mystify 8	Thats affirmative, he is right in the middle of the circle.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

Unknown	One reading Guard
CG 7226	El Centro this is 7226, do you have units you can put on the highway. This man is coming right into the highway area.
NJK Tower	7226, El Centro, thats affirm. You gonna land on the Highway.
CG 7226	7226 the man is on the ground. He is on the ground.
NJK Tower	Roger, understand, on the ground, roger you'll be in the area is that correct.
CG 7226	El Centro Tower this 7226 do you read.
NJK Tower	7226, El Centro on Guard go ahead.
CG 7226	Roger, the man is on the ground and uh is your Tacan working on 19.
NJK Tower	Roger 7226 our Tacan El Centro has been changed is now 106 the Tacan channel.
CG 7226	Roger, I'd better get the tower frequency, the man is up on his feet now, he's apparently ok.
NJK Tower	Roger, you can get tower on 360.2 if you like.
CG 7226	El Centro Tower, 7226 ------ El Centro Tower, 7226.
NJK Tower	7226, El Centro go ahead.
CG 7226	Roger, what are your intentions.
NJK Tower	7226 wait one.
CG 7226	Tower this is 7226, the man is apparently injured uh his one leg uh I'm gonna look around for a place to put this bird down, do you have any Helicopters in the area.
NJK Tower	226 uh we are trying to contact our Air Force, they have a Helicopter and Yuma search and rescue is launching a Helicopter from their base uh right now we're trying to get ours up and they have also notified San Diego Coast Guard and advised them of the situation.

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRAPH 70,
(3) OPNAVINST 3750.6D.

CG 7226	This is 226 Roger, I thing you can get a ground unit here faster than anything. If you have an ambulance you can put it on the road.
NJK Tower	ROGER, WE'll get an ambulance underway right away.
CG 7226	226

TAPE TIME 1264

Unknown	Mystify 8, Mystify 1 over.
Unknown	Go ahead ten.
Unknown	Whats the position of wreckage over.
Unknown	The wreckage is about 8 miles to the Southeast of the South end of the Salton Sea.
Unknown	Roger.
Mystify 8	From Mystify 8 can you give me a quick rundown on the condition of the pilot, over.

TAPE TIME 1288

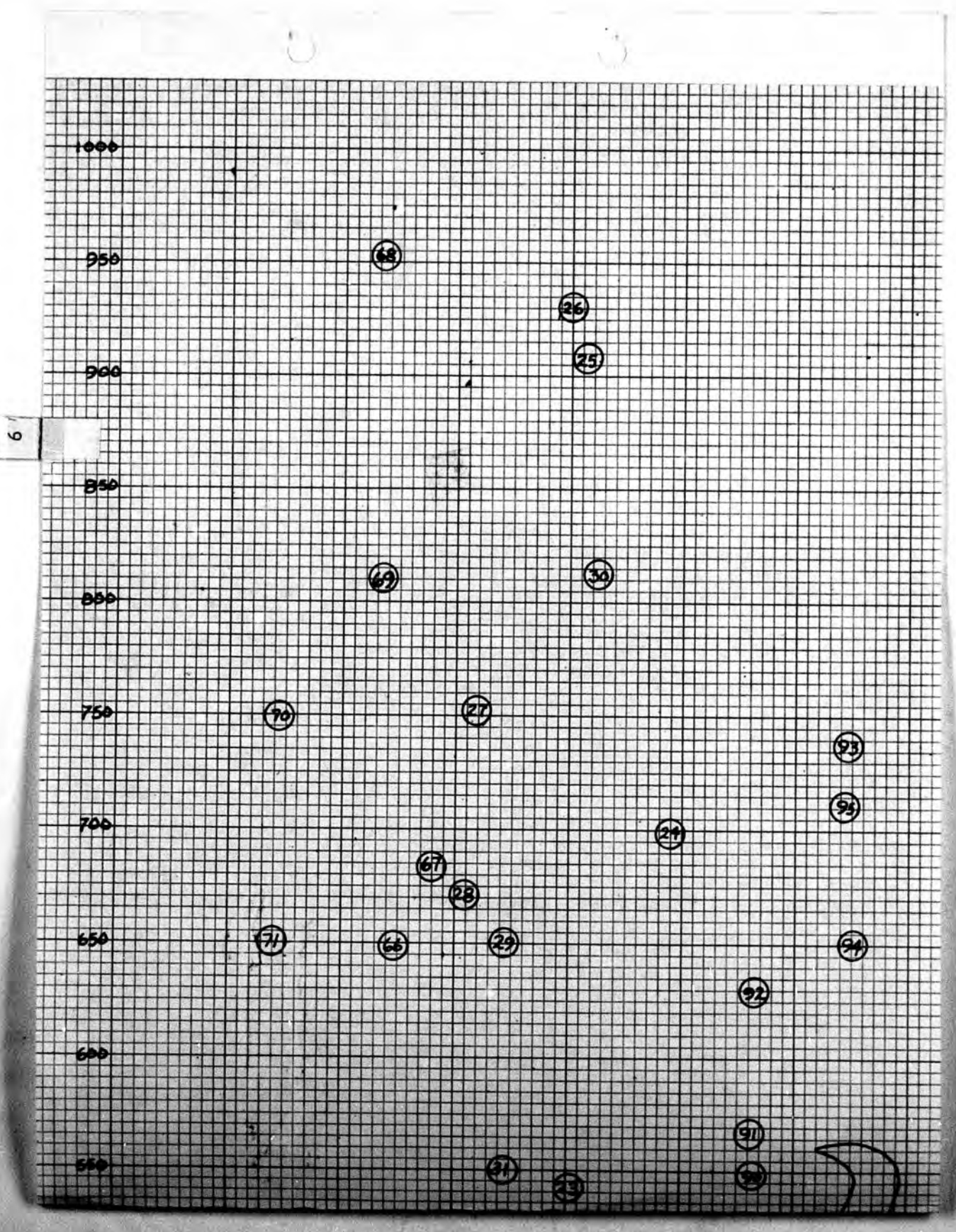
Unknown	Mystify 1, Mystify 8, are you still on this frequency over.
Unknown	Mystify 8, Mystify 9.
Unknown	Roger 9 lets go button 4.
Unknown	Roger, button 4.

I certify this to be a true transcript of the NAF, El Centro Tower tape, as delivered to me by LCDR (b) (6) NAF, El Centro, Operations Officer.

(b) (6)

LCDR USN
Senior Member

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.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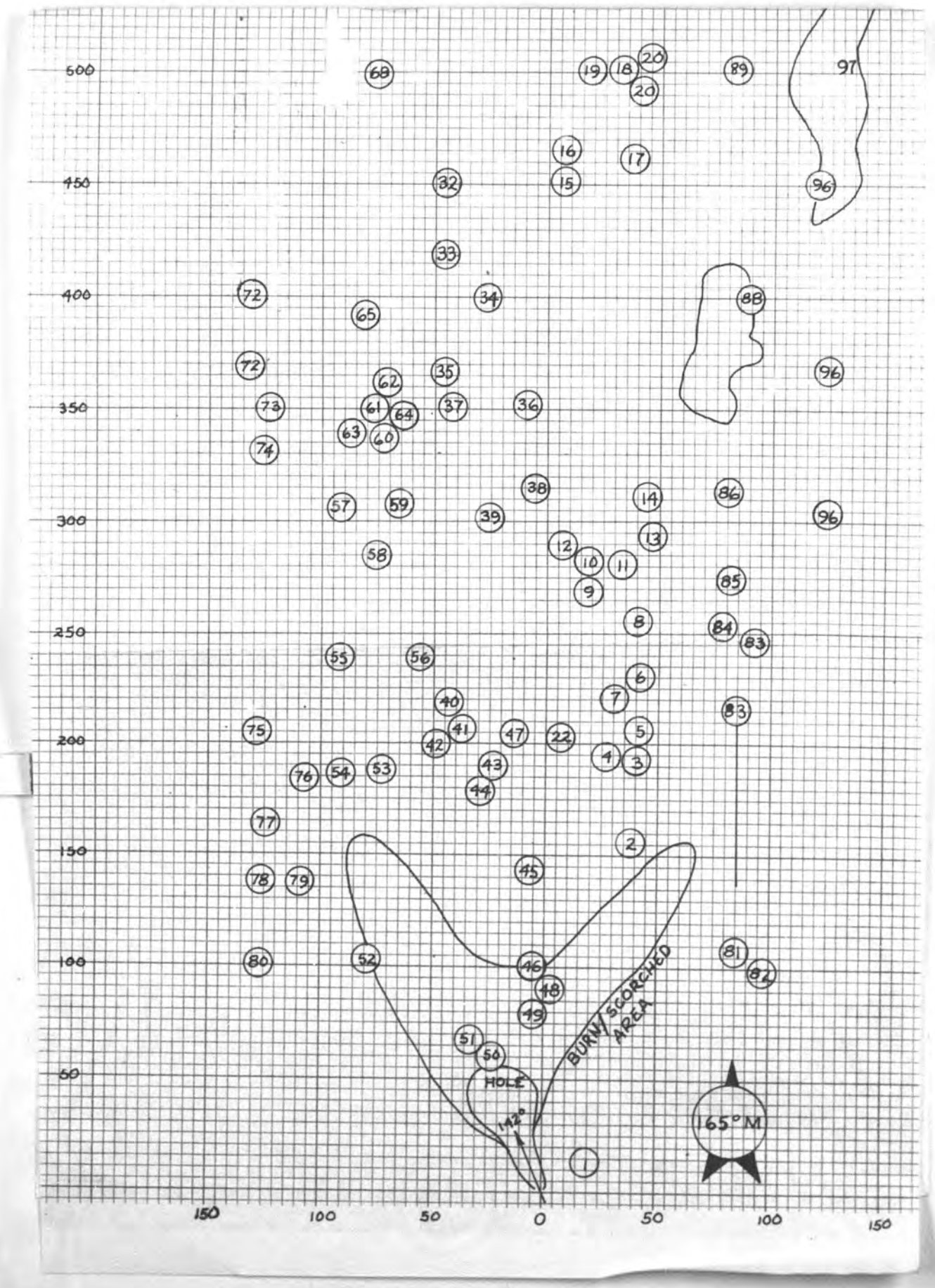
500
450
400
350
300
250
200
150
100
50
150
100
50
0
50
100
150
HOLE
142°
BURN SCORCHED AREA
165° M

LEGEND FOR WRECKAGE DIAGRAM

1. Alternator
2* Portion of fuel line
3* Small part fuel tank baffle (burnt)
4. Hydraulic activator
5* Small part of fuel cell
6. Piece of rudder
7* Piece of backing board
8* Part of fuel cell
9. LOX container (inside)
10* Small part of fuel cell
11* Small part of fuel cell
12. Portion of pilots knee board
13* Small portion of fuel cell
14* Piece of backing board (burnt)
15. Left airleron
16. Stator blades - 1st stage
17. Stator blades - aft states
18. Starboard portion of fuselage (oil vent)
19. Gunsight
20. Stator blades
21. N.A.
22* Fuel float shut-off casing
23. Piece of compressor case
24* Fuel Level Control valve
25. Bomb sway brace

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

26. Labs timer

27. Manual power disconnect handle

28. Instrument panel - compass (133°), DME, Armament panel, turn bank indicator

29. Angle of attack indicator

30. Control used for setting fuel quantity system

31. Cockpit oxygen and "g" suit connector panel (oxygen switch on)

32. Stick control cable actuator

33. Right aileron

34. Windshield

35. Port slat

36* Small portion of wing fuel cell

37* One way check valve - wing

38. Round red rubber seal #516703 cure date October 1961

39. Fuselage - left side cockpit

40. Starboard elevator

41* Small piece of fuel hose

42* Small piece backing board

43. Left aileron tip

44. Oil tank

45. Fire detector box

46. Horizontal stablizer positioner

47-49* Flow dividers

50. Tail hook

51. Emergency generator

52. Part of wing fuel cell

53. Fuel line and fitting

54. Outside cover LOX container

55. Piece of elevator

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

56* Piece of fuel cell

57* Portion of fuel transfer pump

58* Small piece fuselage fuel cell

59. Starboard flap

60* Wing fuel filter

61* Two main fuel fittings

62. Throttle quadrant section

63* Aft section of main fuel cell

64. ASN-19 - ID 307/ARN

65. Port wing, canopy lock lever, emergency hydraulic handle

66. APA-89 parts

67. Rate of climb indicator (3000 min decent)

68. Air conditioning parts

69. Radio gear

70. Starboard catapult hook assembly

71. ASQ-17

72* Two fuel fittings #1A880

73. Port speed brake

74. Drop tank parts

75* Remote fuel shut-off valve A6-7544413507 fuel line

76* PRESSURE FUEL VALUE

77. Two pilon covers

78. Main mount

79. Port strut and assembly

80* Small fuel hose

81* Small piece backing board.

82* Small piece of fuel cell

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRAPH 70,
OPNAVINST 3750.6D

83* Small pieces of backing board

84* Main fuel cell cap and cover - small piece of a/c skin attached

85. Section of drop tank

86* Large piece of fuselage cell

87. N.A.

88. Compressor blades

89* Fuel lines

90* Two flow dividers

91* Short fuel hose

92* Fuel transmitter valve

93* Top of fuel cell - mounting plate

94. Fuel cell cap and wing

95. Piece of compressor case

96* Small piece of fuel cell

97. Compressor blades

* Fuel system parts

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRPAH 70,
OPNAVINST 3750.6D

AIR [illegible]VELOPMENT SQUADRON FIVE
U[illegible]. NAVAL AIR FACILITY
[illegible]INA LAKE, CALIFORNIA

SDO: LT. (b) (6) SUNRISE: 0636 SUNSET: 1849 DATE: TUESDAY 25 SEPT 1962

FLT	T/O	RANGE TIME	RANGE	ETE	A/C	PILOT & CREW	ORDNANCE	FUEL	F/C	REMARKS
1	W/D			1.0	14	(b) (6)	30	2DY	1L	TEST
2	0800			1.5	12	(b) (6)	DOPPLER	2DY	1K	123
3	0805	0815-0900	C-3	1.0	A3J	(b) (6)	2/20$	A	1K	NOTE 2
4	0830		FFN	2.5	2	(b)	26$	2D	1K	269 OSCIL & FILM
5	0830		FFN	2.5	8	(b) (6)	26$	2D	1K	269
6	0845		FFN	2.5	11	(b) (6)	26$	2D	1K	269
7	0845		FFN	2.5	9	(b) (6)	26$	2D	1K	269 OSCIL & FILM
8	0855	0900-0945	C-3	1.0	10	(b) (6)	NOTE 1	A	1K	28
9	0900			1.5	7	(b) (6)	1	A	1A	
10	0915			1.5	6	(b)	1	A	1A	
11	0940	0945-1030	C-3	1.0	A3J	(b) (6)	2/20$	A	1K	NOTE 2
12	1000			1.5	19	(b) (6)	1	DY	1A	
13	1100			1.5	12	(b) (6)	DOPPLER	2DY	1K	123
14	1100			3.0	20	(b) (6)	1	A	1[illegible]	[illegible]ORIS ETR 1630
15	1100	1115-1200	C-3	1.0	10	(b) (6)	NOTE 1	A	1K	28
16	1145			1.5	6	(b) (6)	1	A	1A	
17	1250	1300-1345	C-3	1.0	A3J	(b) (6)	2/20$	A	1K	
18	1315		YUMA	2.5	8	(b) (6)	26$	2D	1K	269
19	1315		YUMA	2.5	2	(b) (6)	26$	2D	1K	269 OSCIL & FILM
20	1330		YUMA	2.5	9	(b) (6)	26$	2D	1K	269 OSCIL & FILM
21	1330		YUMA	2.5	1	(b) (6)	26$	2D	1K	269
22	1400			1.5	12	TBA	DOPPLER	2DY	1K	123

NOTES:

1. ORDNANCE LOAD FOR XE-10 IS 200 RDS 20MM AND 12 FFAR.
2. HOT REFUEL FOR A/J BETWEEN EVENTS # 3 AND # 11.

(b) (6)

LT. USN.
OPERATIONS OFFICER.

. OFFICER'S REPORT OF A/C ACCIDENT, INCIDENT, OR GROUND ACCIDENT - PAGE 1

ORN 3750-8 (Rev. 5-58)

See OPNAVINST. 3750.6C for [illegible]uctions - SPECIAL HANDLING REQUIRED

OPNAV REPORT 3750-7

SECTION A - IDENTIFICATION

(Name and mailing address of activity)

r Development Squadron FIVE, China Lake, California

2. MOR NUMBER: 1-62

(b) (6)

(b) (6) LT, MC, USN — DATE: 17 OCT 62

(b) (6) CDR, USN — DATE: 17 OCT 62

TYPE OF MISHAP: [X] ACCIDENT [ ] GROUND ACCIDENT [ ] INCIDENT

6. TIME AND ZONE: Approx. 1350 PDST

7. DATE: 25 SEP 62

8. GEOGRAPHICAL LOCATION: Approx. 4 miles WNW of Westmoreland, California

9. MODEL A/C	10. BUNO	11. NO. OF OCCUPANTS	12. TYPE ACCDT.	13. DAMAGE CODE	14. UNIT OPERATING A/C
A4D-2N	145066	1	B-1	A	AirDevRon FIVE, China Lake, California

15. INDIVIDUALS INVOLVED - USE ADDITIONAL SHEETS IF REQUIRED. NAME (Last, first and middle initials)	16. UNIT TO WHICH ATTACHED	17. RANK, RATE	18. FILE/SERV. NO. DESIGNATOR	19. BILLET	20. BRANCH OF SERVICE	21. INJURY CODE	22. DISPOSITION
a. IN CONTROL OF A/C (b) (6)	AirDevRon FIVE China Lake, Calif.	CDR	(b) (6) 1310	Pilot	USN	C	X
b.							
c.							
d.							

23. CLARIFICATION OF ITEMS 15-22 WHEN NECESSARY

300204

24. MODEL - OTHER A/C IF INVOLVED	25. BUNO	26. NO. OF OCCUPANTS	27. UNIT OPERATING A/C	28. DAMAGE CODE	29. REPORT NO.

30. DETAILED NARRATIVE ACCOUNT OF ACCIDENT (Use additional 8 X 10½ plain sheets if required)

See enclosure (III)

SECTION B - MEDICAL OFFICER'S QUESTIONNAIRE

YES	NO	DID THE FLIGHT SURGEON:	(If "NO" state reason in space below.)
X		1. VISIT THE SCENE OF THE MISHAP?	
	X	2. PARTICIPATE FULLY IN THE FIELD INVESTIGATION?	Not deemed necessary by the board.
	X	3. PARTICIPATE FULLY IN THE DELIBERATIONS OF THE A/C ACCIDENT BOARD?	Not deemed necessary by the board.

GIVE APPROXIMATE NUMBER OF HOURS SPENT BY THE FLIGHT SURGEON:	4. IN FIELD INVESTIGATION	5. IN BOARD DELIBERATIONS	6. IN PREPARATION OF THIS REPORT
20	5	5	10

7. REPORT PREPARATION CHECK LIST

[X] ALL PARTS OF FORM COMPLETED [X] SURVIVORS' NARRATIVES [X] PHOTOS [X] CONCLUSIONS AND RECOMMENDATIONS [X] REQUIRED COPIES FURNISHED

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PART V- The accident

CDR [redacted] was assigned A4D-2N BUNO 145066 (MYSTIFY 2) on 25 September 1962 for an authorized project flight concerned with the prosecution of CNO assigned project Op/V269. Origin of the flight was NAF, China Lake, Calif., and the flight mission called for glide bombing on target 103A located in the vicinity of NAF, El Centro, Calif. and on target "Candid Camera" in the Yuma, Arizona Area

CDR [redacted] flight leader and LT [redacted] wingman, conducted a mission brief and received a meterological brief prior to take-off.

The pilot, CDR [redacted] conducted a normal pre-flight of the assigned airplane. External configuration of the airplane was two full 300 gallon drop tanks and a centerline practice bomb rack with 4 MK 89 practice bombs (56# weight each).

Take-off was made at 1318 PDT followed by the wingman in MYSTIFY 8, an A4D-2N. After a running rendezvous the flight climbed out on course toward the El Centro target. En route cruise was made at 20,000 feet, 0.68 Mach. Weather en route was generally clear.

As the flight passed about 5 miles to the west of Thermal Vortac the wingman noticed fuel streaming from the lead airplane. The time was approximately 1345 PDT. The flight leader was informed of the situation and turned the drop tank transfer switch off as it is not unusal for A4D type airplanes to vent some fuel overboard when transferring fuel from the drop tanks to the wing tank. After another 30 seconds had elapsed the wingman reported the overboard fuel flow rate increasing. The wingman moved beneath the lead airplane for closer examination and observed fuel streaming out heavily around the centerline bomb rack The wingman checked the right side of the airplane and reported fuel streaming along the wing root. The port side was also checked but there was no visible fuel stream on that side. However, it is noted that from this position the wingman was looking directly into the sun.

When the fuel streaming had been reported to the pilot his internal fuel reading was at 5,300 pounds, having commenced fuel transfer from the drop tanks at an indicated internal fuel reading of 4,500 pounds. There was at this time, approximately 6700 pounds total fuel aboard. After securing the drop tank transfer the internal fuel reading was down to 5,00 pounds. As the internal fuel indication continued to decrease the pilot then resumed transfer from the drop tanks. The internal fuel reading was now at 4,700 pounds The flight commenced descent in order to get below the scattered to broken stratus clouds in the El Centro area. Bases of the clouds were at approximately 6,000 feet During this time an attempt was made to contact El Centro on 340.2MC. This effort was not successful so the flight switched to 243.0 MC (GUARD) and contacted El Centro Tower. The transcript of the Guard transmission is included as enclosure (5). By the time the tower was contacted, indicated internal fuel quanitity was at 4,000 pounds. This reading indicated

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D

ENCLOSURE (III)

a loss of at least 1,300 pounds of fuel in less than 2 minutes. Immediately thereafter the indicated internal fuel reading dropped to 1,000 pounds and the engine flamed out. The flight had been informed by El Centro tower of the duty runway, wind and altimeter setting when the flight leader reported the flame-out and that he could not obtain a re-light. The indicated internal fuel quantity remained at 1,000 pounds, fuel flow was zero and the RPM was at START. The pilot attempted a re-light on MAIN generator and PRIMARY fuel control which was unsuccessful. Electrical power was lost during re-light attempt The drop out generator was deployed, electrical power regained and the wingman informed of the flame-out. Two more re-light attempts were made in MANUAL fuel control; however no fuel flow could be obtained and the throttle was out of the OFF position. The internal fuel quantity indicator remained at 1,000 pounds and at no time was a Fuel Transfer Warning light or Fuel Boost Pump failure noted. The flame out occurred at approximately 15,000 feet. After the three unsuccessful re-light attempts the pilot decided to eject, and informed the wingman of his intention. The last noted altitude by the pilot prior to ejection was 7,000 feet and airspeed at 280 KIAS. The airplane was pointed toward open fields, some nose-down trim applies to the airplane followed by ejection through actuation of the face curtain. The ejection was about 2 miles south of the south shore line of the Salton Sea.

The ejection sequence appeared to be normal and the wingman made a MAYDAY report. The parachute opening was normal although the pilot did have a "line over" (riser line over the parachute canopy). The pilot made one attempt to correct the "line over" which was unsuccessful. He released the left leg strap of the survival gear and then pulled the manual D ring of the parachute during descent to insure separation from the parachute canopy after landing.

During descent the wingman maintained visual contact with the parachute and established radio contact with a Coast Guard UF that was in the immediate area. The UF was given the location of the pilot by the wingman and coupled with the signal of the PRT-3 beacon, the UF was able to arrive on the scene and sight the parachute before the pilot had landed.

The pilot landed on the edge of an irrigation ditch with greater force than anticipated He released the rocket jet fasteners after impact and was not dragged by the parachute. Impact with the ground caused pain in the right foot of the pilot and winded him. He stood up on one leg after releasing the parachute and waved to the wingman.

Within 15 minutes a jeep arrived on the scene and the pilot was taken to a farm house, He transferred to a California Highway Patrol car and was driven to NAF, El Centro.

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRAPH 70,
OPNAVINST 3750.6D.

ENCLOSURE (1)

PART VI - Damage to Aircraft

The airplane suffered total destruction (see enclosure (8) (9) and (10)) as a result of initial impact and resultant fire. Airplane attitude at impact is estimated to have been 110° right wing down and 15° nose down, with the right wing tip contacting the ground first. Aircraft heading at impact was approximately 133°.

The main dispersal of the wreckage was scattered beyond the impact point covering an area of approximately 1000 feet in length and 450 feet in width; isolated parts were found as far as 2000 feet from the impact point. The impact crater was approximately 56 feet in length in a southeasterly direction, 24 feet in width, and varied in depth from negligible at initial impact at the northern end to 9 feet in depth at the southern end.

Due to total destruction of the aircraft, salvage of components was not feasible.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

MEDICAL OFFICER'S REPORT OF A/C ACCIDENT, INCIDENT, OR GROUND ACCIDENT - PAGE 2
OPNAV FORM 3750-8A (Rev. 5-58)

OPNAV REPORT 3750-7

SECTION C - PHYSIOLOGICAL, HUMAN ENGINEERING, DESIGN, SOCIO-PSYCHOLOGICAL, AND TRAINING FACTORS WHICH CONTRIBUTED IN SOME DEGREE TO THIS A/C ACCIDENT, INCIDENT, OR GROUND ACCIDENT

NAME OF INDIVIDUAL (Last, first, middle) (b) (6) (b) (6)

MODEL A/C: A4D-2N

Check E-Established, S-Suspected, or P-Present for each factor selected. Additional 8X10½ plain sheets will be used for the supporting account of items checked below. Identify each statement with the factor and section identification (e.g., C1, C2, etc.). Attach all sheets pertaining to these factors to this form upon completion.

E	S	P	✓ FACTORS
			PHYSIOLOGICAL:
			1. Physically incapacitated in flight
			2. "G" forces
X		X	3. Environmental stress - External
			4. - Internal
			5. Dysbarism/explosive decompression
			6. Diet
			7. Fatigue
			8. Hypoxia
			9. Related illness
			10. Vertigo/Disorientation/Illusions
			11. Hyperventilation
			12. Drugs
			13. Physical state
			14. OTHER:
			HUMAN ENGINEERING AND DESIGN:
			15. Personal equipment
			16. Displays and/or controls
			17. Work arrangement
			18. Working environment
			19. Habit interference
			20. OTHER:
			SOCIO-PSYCHOLOGICAL: (Emotional stress from non-duty sources)
			21. Pregnancy
			22. Illness or death
			23. Arguments
			24. Elated/Depressed state
			25. Personal habits - Drinking
			26. - Sex
			27. - Gambling
			28. - Debts

E	S	P	✓ FACTORS
			SOCIO-PSYCHOLOGICAL: (Emotional stress from duty sources)
			29. Expeditings/Delays
			30. Weather
			31. Mechanical Problems
			32. Social and working relationships
			33. Personal comfort
			34. Regulations
			35. Facilities
			36. Navigation
			37. Duty assignment
			38. Personality traits
			NON-STRESS FACTORS:
			39. Faulty attention
			40. Poor judgement
			41. Forgetfulness
			42. OTHER SOCIO-PSYCHOLOGICAL FACTORS
			TRAINING FACTORS:
			43. Physiological training
			44. Emergency Procedures training
			45. Survival and rescue training
			46. Refresher training
			47. Transition training
			48. OTHER:

SECTION D - AIR CREW DATA (fill in where applicable)

1. Flight time past 30 days	40.6	7. Total time in model A4D	973.8
2. Flight time last 24 hours	0.5	8. Number of days grounded last month, give reason	0
3. Number of flights in last 24 hours	2		
4. Time at controls this flight	0.5	9. Number of and dates of previous accidents (2)	June, 1954, TBF: Dead stick in water
5. Number of hours duty last 24 hours	12		Jan.,1952, F4U4: intentional wheels up
6. Total flight time	4446.1		

SECTION E - CONTRIBUTING FACTORS AND THEIR ANALYSES (As condensed from Part I, Sect. D and Part VIII of the AIR)

NOTE: Fill in this section only on that set of forms prepared for FIRST individual listed in Section A, i.e. 15(a). Attach additional sheets as necessary.

Material failure, Suspected.

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MEDICAL OFFICERS REPORT 1-62

AIR DEVELOPMENT SQUADRON FIVE, CHINA LAKE, CALIFORNIA

ADDENDUM TO PAGE 2, SECTION C.

ITEM NUMBER

31. The mechanical problems encountered point to a defective fuselage fuel cell as the cause for this accident. The pilot responded to the emergency in a straightforward manner and demonstrated the benefit of his safety and survival equipment lectures and checkouts. Detailed accounts of both the handling of the emergency and the pilot's actions after ejection are included in enclosures (III) and (IV).

PART VIII - The Analysis

a. Personnel Factors.

Investigation and analysis of the events prior to, during and following loss of fuel, flame-out and subsequent ejection reveal no contributing personnel factors. There was no prior condition discovered in the pilot's examination of the airplane or post start airplane check that would give warning of the events to follow. The airplane operated and functioned normally until the fuel streaming was reported by the wingman. An emergency situation developed when the fuel loss could not be controlled. The pilot and wingman recognized the situation as cause for an immediate landing. Action of the pilot to resume transfer following the rapid loss of fuel was proper. Establishment of communications with El Centro Tower and the let-down to get beneath the partial cloud layer in the El Centro area was sound operating procedure. It is noted that the first re-light attempt did not comform to procedures outlined in the A4D-2N Flight Manual NAVWEPS 01-40AVB-1 dated 1 December 1960, revised 15 July 1962. The procedure specified requires that the emergency generator be EXTENDED and the fuel control be in MANUAL for an airstart. The pilot was aware of this procedure and the procedure was outlined on his emergency knee board card. The following two airstart attempts were in accordance with prescribed procedures. However, the fact that no fuel flow could be obtained during the airstart attempts precluded an airstart regardless of procedure employed. The steps followed by the pilot in pointing the airplane toward open fields, introducing nose-down trim to the airplane and placing the feet firmly on the rudder pedals prior to ejection are indicative of the professional aviator. The pilot's action during descent in partially releasing the survival gear and pulling the manual D ring of the parachute also reflect calmness and proper training. The "line over" on the parachute canopy caused the pilot some concern. Liasion with the Naval Parachute Facility revealed that the "line over" phenomenon will occur about 2% of the time and is not a result of improper parachute packing procedure. NPF personnel also indicated that a "line over" does not increase parachute sink rate measurably. The situation can be corrected by "climbing up" the affected shroud line but reluctance of the pilot to do so is understandable. The injury sustained in landing was the result of impacting on the edge of a ditch and in all probability could not have been avoided.

b. Supervisory Factors.

None

c. Material Failures and Malfunctions.

(1) Main Fuselage Fuel Cell.

The main fuel cell, manufactured by the Firestone Rubber Company, was installed in BUNO 145066 during the PAR, March 1961. PAR rework records show that this tank had been reworked by NAS Alameda O/R prior to installation.

Aporoximately 75% of the bottom of the fuel cell was recovered. The recovered portion of the cell is depicted by white chalk. (See enclosure 11).

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRPAH 70,
OPNAVINST 3750.6D.

ENCLOSURE (1)

During the investigation the AAR board, aided by DAC engineers and the Firestone Company representative reassembled the recovered portion of the fuel cell in an effort t determine if the main fuel cell had failed in any way.

Examination of the bottom of the cell revealed several areas of activation, one large area of tank separation and one area of deformation. (see enclosures(12-17)). From pieces of the fuel cell it was determined that only the activated (fuel soaked) areas had burned. Enclosures (12&13) clearly shows that the fuel cell did not burn beyond the activated area.

An activated area is that portion of the fuel tank which has had the self sealant section of the tank activated by the airplane fuel. Only the inside of the tank has a fuel proof layer of material; thus, for activation to start from the inside, this fuel-proof layer must be damaged/broken by some method. Because the outside layer does not have a fuel proof layer, fuel can penetrate the outer portion of the tank and activate the self sealant, thus causing a raised portion (ply separation) on the inside of the cell (see enclosure (15)).

The bottom of the fuel cell, from the fuel boost pump aft, shows signs of heavy permanent deformation (see enclosures (13 & 14)) while from the fuel boost pump forward there are only signs of activation and separation (see enclosures (13 & 15)).

From the previously cited signs of deformation the aft portion of the fuel boost pump appears to have sagged approximately one inch, (see enclosures (16 & 17)).

A faulty patch was found on one section of the cell wall. This wall damage had apparently been caused by a previouslyinstalled metal baffle plate. Although the edges of this patch had come loose, the damaged area was still covered. This defect was in no way a cause factor in this accident.

(2) Fuel Filter. The fuel filter was recovered by digging in the forward area of the impact crater; however, the filter clamp and cover plate were not found. The filter was taken to the NAF, El Centro, California Machine Shop and cut open. On examination, the fuel filter element showed no signs of contamination. Portions of the fuel filter elements were later examined by DAC Chemists and found to have no foreign material trapped in them. Having just completed a major check, the fuel filter element had been replaced approximately two flight hours prior to the crash. The fuel filter case circumferential weld (located at the cover plate retaining clamp end of the fuel filter) was found broken. The weld and weld break were analyzed by DAC engineers and determined to have been broken on impact, with the filter cover plate in place at the time of impact.

(3) Engine-Driven Fuel Pump. On disassembling the fuel pump, a "wad" of foreign material was found in one of the two fuel pump passageways located down stream of the pump gears. The foreign material, after examination by DAC chemists, was determined to be a glass substance similar to that used

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRAPH 70,
OPNAVINST 3750.6D.

ENCLOSURE (2)

in cockpit padding. The foreign material also contained mud and clay similar to that found at the crash site. This, in addition to the fact that no foreign material was found upstream in the fuel filter and that it is a physical impossibility to pass this "wad" through the fuel filter into the pump, helped determine that the FOD material was injected into the pump as a result of impact.

(4) Fuel Flow Dividers. The fuel flow divider filters were examined by DAC chemists and found to contain only sand and clay similar to the ground at the crash site.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (1)

Part VIII. The Analysis

d. Facilities

The rapid response of the Coast Guard UF to the MAYDAY report was outstanding. Prompt acquisition of the pilot by the Coast Guard Crew was facilitated by the wingman's presence and the successful operation of the PRT-3 Beacon. Recovery of the pilot was effected by a civilian in a jeep type vehicle. Transfer of the pilot to a California Highway Patrol car was made at a farm house located approximately one mile from the landing area of the pilot. The pilot elected to remain in the Highway Patrol car for the trip to NAF, El Centro in lieu of transferring to the Navy Ambulance since the patrol car was air conditioned.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (7)

MEDICAL OFFICERS REPORT 1-62

AIR DEVELOPMENT SQUADRON FIVE, CHINA LAKE, CALIFORNIA

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS:

Malfunction or failure of the fuselage fuel cell was the cause of this accident. The pilot was familiar with the airplane, his mission and the target. The airplane was recently returned from PAR and was considered in excellent condition. That a wingman was present and able to give close scrutiny to the airplane during the sequence of events that led up to the impact of the airplane with the ground was most fortuitous. All these facts notwithstanding, exhaustive investigation and analysis of the fuel system components merely pinpointed the fuselage fuel cell as the area at fault. No absolutely clearcut defect was demonstrated. (b) (5) [redacted]

RECOMMENDATIONS:

With respect to the failure of the fuel cell, the only recommendation involves inspecting all the fuel cells during a PAR period rather than a random selection of fuel cells as a representative measure.

With respect to the "Mae West" or "line over" deformity of the parachute canopy, this feature has serious ramifications. The pilot attempted to change the deformity but stopped when it appeared that he might collapse the canopy. While the pilot's reactions are most understandable, this situation confirms the opinion of this Flight Surgeon that (b) (5) [redacted]

During a recent LPC lecture given at the Physiological Training Unit at NAS North Island, the chief parachute rigger, who had many jumps to his credit, elaborated on the many measures that a pilot may do if he finds himself or his parachute in a compromised situation during descent. One example that has long been of concern to the pilots at this facility is a streaming parachute due to static electricity. A simple solution was offered: reach up, grab the shroud lines and pull them rapidly apart like "cracking a whip" so that the canopy skirt will billow. There were other problems discussed after the Chief's lecture that involved landing in mountainous terrain, "line over", and ripped panels and other topics. The pilots present were observed rather closely by this Flight Surgeon all the time. (b) (5) [redacted]

The Safety and Survival training covers a multitude of timely and life-saving features but it would seem most appropriate that m more emphasis be placed on the parachute. If a man lands right or finds a situation that he can actively alter prior to landing, he'll be in a better position to survive. It is recommended that the Safety Center

ENCLOSURE (IX)

MEDICAL OFFICERS REPORT 1-62

AIR DEVELOPMENT SQUADRON FIVE, CHINA LAKE, CALIFORNIA

CONCLUSIONS AND RECOMMENDATIONS

RECOMMENDATIONS: (Cont'd)

strongly consider surveying the experience of the Navy Parachute Facility as well as similar departments of the other services and produce a moving picture combining both actual situations and animated cartoons that would provide more definitive methods of handling a parachute. The next recommendation is a necessary corollary of the first; i.e., that consideration be given to providing more realistic parachute experience for all pilots which would include not only parachute hangs in appropriate harnesses but also jump training up to and possibly including live jumps from a transport type airplane. Some objections will almost certainly be raised against this recommendation on the grounds that more people will be hurt than helped However, the new physical fitness program should preclude anyone partaking of this valuable program who is not in good physical condition.

ENCLOSURE (2)

MEDICAL OFFICER'S REPORT OF A/C ACCIDENT, INCIDENT, OR GROUND ACCIDENT - PAGE 3
OPNAV FORM 3750-8B (5-58)

OPNAV REPORT 3750-7

SECTION F - SAFETY, PERSONAL, AND SURVIVAL EQUIPMENT

Prepare a narrative account of damaged or failed items. Identify each item discussed (e.g., F1, F2, etc.)

NAME OF INDIVIDUAL (Last, first, middle) (b) (6) (b) (6)

MODEL A/C: A4D-2N

GENERAL DESCRIPTION OF EQUIPMENT	AVAILABLE YES	AVAILABLE NO	SPECIFIC MODEL OR TYPE	UTILIZED YES	UTILIZED NO	FAILED YES	FAILED NO	DESCRIPTION OF DAMAGE TO EQUIPMENT
1. Shoulder harness	X		Integrated	X			X	
2. Lap belt	X		Integrated	X			X	
3. Inertia reel	X		RAPEC I	X			X	
4. G-Suit	X		Z-3	X			X	
5. Pressure suit-full or partial		X	See addendum					
6. Exposure suit		X	See addendum					
7. Flight suit (Other than above)	X		Summer Flying	X			X	
8. Helmet	X		APH-6	X			X	
9. Goggles/Eyeshield	X		APH-6	X			X	
10. Shoes	X		Iron Age Boots	X			X	
11. Gloves	X		Summer Flying	X			X	
12. Life vest		X	See addendum					
13. Life raft	X		PK-2		X			
14. OTHER:								
15. SIGNAL DEVICE - Flare (Night)	X		MK-13 Mod 0 in PK-2		X			
16. - Flare (Day)	X		MK-13 Mod 0 in PK-2		X			
17. - Dye marker	X		PK-2		X			
18. - Radio (A)	X		PRT-3	X			X	
19. - Flashlight		X	See addendum					
20. - Mirror	X		PK-2		X			
21. OTHER:								
22. SURVIVAL GEAR - Knife	X				X			
23. - First aid kit		X	See addendum					
24. - Shelter	X				X			
25. - Food	X				X			
26. OTHER:								
27. RESCUE - Vehicle	X		Farmer's Jeep; Field Amb.	X			X	
28. - Sling, Net, Stretcher								
29. OTHER:								

SECTION G - DETAILED EQUIPMENT QUESTIONNAIRE

OXYGEN EQUIPMENT

1. MASK - MODEL OR TYPE: A 13 A
2. MODIFICATIONS, IF ANY: Chest mounted soft hose; new type Hardeman fittings (1)
3. REGULATOR - MODEL OR TYPE: Firewel 1732-3 (3)
4. MODIFICATIONS, IF ANY: None (1)
5. PREFLIGHTED BY USER? [X] YES [ ] NO
6. IF NO, WHY NOT
7. LIST DISCREPANCIES NOTED BY PREFLIGHT CHECK: None
8. OXYGEN SUPPLY: PRIOR TO FLIGHT 9 LITERS (Liquid) _____ P.S.I. (Gas); TIME OF ACCIDENT est. 8.5 LITERS (Liquid) _____ P.S.I. (Gas)
9. WAS OXYGEN IN USE AT TIME OF ACCDT. [X] YES [ ] NO
10. IF YES, WAS SELECTOR SETTING [X] 100% [ ] NORMAL
11. WAS ALL OXYGEN EQUIPMENT NECESSARY FOR THIS FLIGHT AVAILABLE? IF NO, LIST ITEMS AND REASON WHY. [X] YES [ ] NO
12. WAS OXYGEN MASK REMOVED AT ANY TIME IN FLIGHT? IF YES, GIVE DURATION AND REASON. [X] NO [ ] YES

RELEASE DEVICES

13. TYPE CHUTE RELEASE DEVICE: Automatic Master Spec. 1000 D (1)
14. TYPE HARNESS RELEASE DEVICE: Rocket Jet (1)
15. WHEN WERE RELEASE DEVICES ACTIVATED? (2) 13. After ejection. 14. After landing.
16. WERE DIFFICULTIES ENCOUNTERED WITH RELEASE DEVICES? IF YES, STATE DIFFICULTIES, WHEN ENCOUNTERED AND CAUSE. [ ] YES [X] NO
17. WERE DIFFICULTIES ENCOUNTERED AFTER ACTIVATING RELEASE DEVICES? IF YES, STATE DIFFICULTIES, WHEN ENCOUNTERED AND CAUSE. [ ] YES [X] NO
18. WAS LIFE VEST INFLATED PRIOR TO ACTIVATING RELEASE DEVICES? IF YES, WHAT DIFFICULTIES DID THIS PRODUCE? [ ] YES [ ] NO

(Continued on OPNAV FORM 3750-8C)

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MEDICAL OFFICERS REPORT 1-62

AIR DEVELOPMENT SQUADRON FIVE, CHINA LAKE, CALIFORNIA

ADDENDUM TO PAGE 3, SECTION F.

ITEM NUMBER

5. Not deemed necessary for this flight.
6. Not deemed necessary for this flight.
12. Not deemed necessary for this flight.
19. Not deemed necessary for this daylight flight.
23. Not packed into seatpan on this type airplane. Pilots are responsible for carrying their own which they seldom do.
24. The PK-2 life raft was available for shelter, but the PRT-3 radio eliminates the paulin in the emergency equipment container.

MEDICAL OFFICER'S REPORT OF A/C ACCIDENT, INCIDENT, GROUND ACCIDENT - PAGE 4
OPNAV FORM 3750-8C (5-58)

OPNAV REPORT 3750-7

SECTION G - DETAILED EQUIPMENT QUESTIONNAIRE (Continued)

NAME OF INDIVIDUAL (Last, first, middle) (b) (6) (b) (6)

MODEL A/C: AJ1D-2N

RESTRAINT HARNESS

19. INTEGRATED HARNESS SYSTEM, MODEL/TYPE: MA-2 (1)

20. INTEGRATED? [X] FULL [ ] PARTIAL

21. MODIFICATIONS, IF ANY STATE REASON: Knife pocket on torso harness. Safety Officer order.

22. DID INTEGRATED HARNESS FIT PROPERLY? IF NO, LIST DISCREPANCIES IN FIT AND GIVE REASONS THEREFOR
[ ] NO [X] YES

23. INTEGRATED HARNESS FITTING WAS CONDUCTED BY:
[ ] WEARER [ ] FLIGHT SURGEON [X] PARACHUTE RIGGER [ ] AVIATION EQUIPMENT OFFICER [ ] OTHER

24. IF SHOULDER HARNESS WAS USED, WAS IT:
[ ] LOCKED [ ] UNLOCKED [ ] TIGHT [ ] SLACK [ ] OTHER CONDITION

HELMET

25. TYPE HELMET: APH-6

26. LIST PRESCRIBED MODIFICATIONS: Chin strap, Nape strap, Inter-Helmet Hardeman Fittings (4)

27. OTHER MODIFICATIONS AND REASON FOR THEM

28. DID HELMET FIT PROPERLY? IF NO, GIVE REASON
[X] YES [ ] NO

29. HELMET FITTING WAS CONDUCTED BY:
[X] WEARER [ ] FLIGHT SURGEON [ ] PARACHUTE RIGGER [ ] AVIATION EQUIPMENT OFFICER [ ] OTHER

PARACHUTE

30. TYPE CHUTE: NB-9

31. LAST PACKING DATE: 9-11-62

32. MODEL/TYPE BAILOUT OXYGEN: Douglas U-Shape (2)

33. AUTOMATIC RIPCORD, IF INSTALLED (Model and type)
[ ] NONE Master Spec. 1000 D (1)

34. DID AUTOMATIC RIPCORD FAIL? IF YES, WHY?
[X] NO

35. WAS RIPCORD ACTIVATION
[ ] MANUAL [X] AUTOMATIC?

36. IF MANUALLY ACTIVATED STATE REASON AND ANY DIFFICULTIES ENCOUNTERED

37. DID CHUTE OPEN IMMEDIATELY? IF NO, GIVE REASON
[X] YES [ ] NO

38. ALTITUDE THAT CHUTE OPENED: Est. 6,000 FEET

39. OPENING SHOCK WAS:
[ ] SLIGHT [X] MODERATE [ ] SEVERE

40. BODY ATTITUDE AT OPENING: Feet down

41. CONDITION OF CHUTE AFTER OPENING: Shroud line over canopy, see addendum.

42. CHUTE OSCILLATION PRESENT:
[ ] NONE [ ] SLIGHT [X] MODERATE [ ] SEVERE

43. IF OSCILLATION WAS PRESENT, HOW WAS IT STOPPED?: Slowed down by itself

44. WEATHER CONDITIONS DURING DESCENT (Cloud formations): 9000 feet Scattered; 4500 feet Scattered Wind 8 Kts SSE; Temp. 93° F.

45. TOPOGRAPHY OF LANDING SITE: Level farm land, but on side of irrigation ditch. (2)

46. WAS BAILOUT OXYGEN CONNECTED?
[X] BEFORE EXIT [ ] AFTER EXIT [ ] NO [ ] N.A.

47. WAS BAILOUT OXYGEN USED? IF NOT, WHY
[X] YES [ ] NO

48. WHEN WAS IT ACTIVATED?
[ ] BEFORE EXIT [X] AFTER EXIT (3)

49. GIVE DIFFICULTIES ENCOUNTERED WITH BAILOUT OXYGEN AND THEIR CAUSE, IF ANY: Depleted two-thirds down. See addendum.

50. WAS CHUTE HARNESS
[ ] TIGHT [X] SNUG [ ] LOOSE

51. WAS A SITTING POSITION IN SLING OBTAINED DURING DESCENT? IF NOT, WHY?
[ ] NO [X] YES [ ] NOT ATTEMPTED ( )

52. SEAT CUSHION IF PROVIDED (Model/Type)
[ ] NONE Douglas foam rubber (4)

53. WAS PARARAFT LANYARD CONNECTED TO LIFE VEST D RING? IF NOT, WHY?
[X] NO [ ] YES No life vest on pilot

54. LIST TYPE OF PARACHUTE TRAINING COMPLETED BY THIS INDIVIDUAL
[ ] NONE Basic Training; FAETULANT Survival School, Norfolk, Va., 1959.

55. IF ATTEMPT WAS MADE TO RELEASE PARARAFT DURING DESCENT, WAS RELEASE ACTIVATED SUCCESSFULLY?
[ ] YES [ ] NO

56. IF NO, GIVE REASON

OTHER

57. IF G-SUIT, EXPOSURE SUIT, FULL OR PARTIAL PRESSURE SUIT WAS WORN, DID IT FIT PROPERLY? IF NOT, LIST DISCREPANCIES IN FIT AND GIVE REASONS THEREFOR.
[X] YES [ ] NO Z-3

58. WAS G-SUIT EQUIPPED WITH A SPRING-LOADED DISCONNECT ADAPTER? IF NO, GIVE REASON
[X] YES [ ] NO

59. LIST ALL ITEMS OF NON-STANDARD CLOTHING OR SURVIVAL EQUIPMENT UTILIZED
None

60. WAS ANY ITEM OF EQUIPMENT LOST? IF YES STATE ITEM, WHEN LOST, AND REASON FOR LOSS.
[X] NO [ ] YES

61. WAS ANY ITEM OF EQUIPMENT DISCARDED? IF YES, STATE ITEM, WHEN DISCARDED, AND REASON FOR DISCARD.
[X] NO [ ] YES

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MEDICAL OFFICERS REPORT 1-62

AIR DEVELOPMENT SQUADRON FIVE, CHINA LAKE, CALIFORNIA

ADDENDUM TO PAGE 4, SECTION G.

ITEM NUMBER

41. The "Mae West" deformity, which, by definition, describes two hemispheres of the parachute canopy, is created by the presence of one of the shroud lines over the center of the canopy. According to the riggers at the navy Parachute Facility, El Centro, California, this condition occurs approximately 2% of the time. Attempts by the NPF to cause such a condition by fouling packing of a parachute have not increased the incidence of this condition. Furthermore, NPF stated that the Mae West deformity will not appreciably affect descent rate. The pilot attempted to slip the shroud line from the center position by dumping one side of the parachute but without success. Fearing that the canopy might collapse, he stopped dumping.

49. Approximately two-thirds of the way to the ground the pilot experienced difficulty breathing and noted that his bailout bottle was no longer supplying him oxygen. He slipped the Hardeman fittings loose one notch from the tight position and retained his mask until he reached the ground.

MEDICAL OFFICER'S REPORT OF A/C ACCIDENT, INCIDENT, OR GROUND ACCIDENT – PAGE 5 OPNAV REPORT 3750-7
OPNAV FORM 3750-8D (Rev. 5-58)

SECTION H - EMERGENCY EXIT FROM A/C AND SURVIVAL FACTORS

NAME OF INDIVIDUAL (Last, first, middle) (b) (6) (b) (6) | MODEL A/C: AD-2N

S	E	S-SUSPECTED, E-ESTABLISHED	REMARKS
		1. EJECTION - Attempted	
	X	2. - Accomplished	
		3. - Through canopy	
YES	NO	EJECTION DIFFICULTIES ENCOUNTERED	IF YES, EXPLAIN DIFFICULTIES
		4. - Prior to	
		5. - During	
		6. - Subsequent to	
XX	XX	7. Give type and model of seat used	RAPEC I
		8. BAILOUT - Attempted	
		- Accomplished	

9. ALTITUDE AT TIME OF EXIT (feet): ABOVE SEA LEVEL 6,000 ABOVE TOPOGRAPHY

10. ATTITUDE OR MANEUVER OF A/C AT EXIT OR IMPACT: 30° dive, wings level 3-(1)-(5)

11. AIRSPEED: Est. 280 Kts.

12. COLLISION OF A/C WITH: [X] GROUND [ ] WATER

13. CONTROLLED? [ ] YES [X] NO [ ] UNKNOWN

14. POWER: [ ] ON [X] OFF

15. WHEELS: [X] UP [ ] DOWN

16. FLAPS: [ ] FULL [X] UP [ ] PARTIAL

17. CANOPY POSITION AT EXIT OR IMPACT: [ ] OPEN [ ] CLOSED [X] JETTISONED

18. SEA STATE

19. AIR TEMP. 93 °F

20. WATER TEMP. °F

21. A/C FLOATED SEC.

22. TIME IN WATER

23. TIME IN RAFT

BAIL OUT OR COLLISION WITH WATER OR GROUND

24. EXIT USED

25. IS THIS THE RECOMMENDED EXIT? IF NO STATE REASON FOR CHOICE. [ ] YES [ ] NO

26. DIFFICULTIES WITH THIS EXIT WERE [ ] IN REACHING [ ] IN OPENING [ ] IN EXITING

27. STATE NATURE OF DIFFICULTY

28. BODY POSITION DURING EXIT

29. LIST OTHER FACTORS NOT INDICATED ABOVE WHICH AFFECTED EXIT FROM A/C

SURVIVAL FACTORS: Check factors below which are appropriate for this accident. Prepare a detailed narrative account of the factors checked below and attach to this form. Identify each item discussed by item number (e.g., H30, H31, etc.)

COMMUNICATIONS:		MAINTAINING BODY TEMPERATURE:	
X	30. Communicated position prior to mishap		50. Items used as shelter
(1)	31. Witnesses at scene		51. Items used as clothing
X	32. Electronic signal devices		52. Fire
	33. Visual signal devices		53. OTHER:
	34. Auditory signal devices	ENVIRONMENTAL HAZARDS:	
	35. OTHER:		54. Exposure to natural forces
TRAVEL:			55. Exposure to dangerous animals and plants
	36. LAND		56. Unfriendly native population
	37. WATER		57. OTHER:
SHELTER:		MORALE:	
	38. Life raft		58. Isolation
	39. Parachute		59. Psychological shock
	40. A/C structure		60. Lack of motivation to survive
	41. Natural shelter		61. Boredom
	42. Man-made shelter		62. Rationing, activities, and group coordination
	43. OTHER:		63. OTHER:
WATER SOURCE:		FOOD SOURCE:	
	44. Desalter kit, seawater or solar still		64. Prepared survival rations
	45. Rain, dew, snow, ice, etc.		65. Animals/plants
	46. Processed beverages		66. OTHER:
	47. Canteen, thermos, water breaker, etc.	SURVIVAL TRAINING RECEIVED PRIOR TO MISHAP:	
	48. Streams, ponds, wells, etc.	X	67. See addendum.
	49. OTHER:		

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MEDICAL OFFICERS REPORT 1-62

AIR DEVELOPMENT SQUADRON FIVE, CHINA LAKE, CALIFORNIA

ADDENDUM TO PAGE 5, SECTION H.

ITEM NUMBER

30. The wingman informed the pilot of the leaking fuel and then communicated with NAF, El Centro on GUARD after an unsuccessful attempt to raise the tower on Channel 2. When the pilot told the wingman that he had flamed out, the wingman in turn transmitted a MAYDAY to NAF, El Centro. During these transmissions a Coast Guard UF practicing touch and goes on the Salton Sea came up on GUARD and conveyed to NAF, El Centro of its intentions to proceed to the scene of the accident. The UF made visual contact from the PRT-3 signal. Both the wingman and the UF continued to keep NAF, El Centro aware of developments until it was apparent that the pilot had landed safely but with some leg injury.

32. The PRT-3 functioned well.

67. The Safety Officer monitored the pilot during an NB-9 parachute hang on 10 JAN 62. The pilot received a RAPEC seat check out from the Squadron Safety Officer on 13 FEB 62. On 15 FEB 62 he passed his maintenance swim. A lecture on Desert Survival was given by the Flight Surgeon on 18 APR 62.

MEDICAL OFFICER'S REPORT OF A/C ACCIDENT, INCIDENT, OR GROUND ACCIDENT – PAGE 6

OPNAV FORM 3750-8E (Rev. 5-58) — OPNAV REPORT 3750-7

SECTION 1 - PATHOLOGICAL FACTORS (Use A to denote ANTE MORTEM; P for POST MORTEM, when known and applicable.)

1. NAME OF INDIVIDUAL (Last, first, middle): (b) (6) (b) (6)

MODEL A/C: AJD-2N

2. AGE: (b)

3. HEIGHT: (b) INCHES

4. WEIGHT: (b)

5. LOCATION AND DIRECTION FACING AT TIME OF ACCIDENT: forward in ejection seat

6. INJURY CODE: D

7. UNCONSCIOUSNESS: ☐ SHORT DURATION LITTLE SIGNIFICANCE ☐ OTHER (give time)

8. INTERNAL INJURIES (Non-fatal cases)

HEAD INJURIES

9. CEREBRAL CONCUSSION: ☐ MINOR ☐ SERIOUS ☐ CRITICAL ☐ FATAL

10. FACIAL INJURIES (n. e. c.)

11. INTRA-ORAL INJURIES

12. MINOR EYE INJURIES: ☐ RIGHT ☐ LEFT

13. MAJOR EYE INJURIES: ☐ RIGHT ☐ LEFT

14. TYPE OF FRACTURE

	SKULL		VERTEBRAE (Specify No.)					SHOULDER GIRDLE	RIBS	PELVIS	UPPER ARM		LOWER ARM		HAND		UPPER LEG		LOWER LEG		FOOT	
	CRAN.	FACIAL	CERV.	THOR.	LUMBAR	SACRAL	COCCYX				R	L	R	L	R	L	R	L	R	L	R	L
SIMPLE																					(b) (6)	
COMPOUND																						
COMMINUTED																						
DISLOCATION		JAW									SHOULDER		ELBOW		WRIST		HIP		KNEE		ANKLE	
															HAND						FOOT	

15. AMPUTATIONS/AVULSIONS (State Parts)

16. LIST PRE-EXISTING PHYSICAL DEFECTS PRESENT AT TIME OF POST CRASH EXAMINATION: None

17. SOFT TISSUE INJURIES

		LACERATIONS			CONTUSION/SPRAIN/STRAIN			ABRASIONS		
		MILD	MODERATE	SEVERE	MILD	MODERATE	SEVERE	MILD	MODERATE	SEVERE
HEAD (n. e. c.)	VENTRAL									
	DORSAL									
NECK										
THORAX	VENTRAL									
	DORSAL									
ABDOMEN	VENTRAL									
	DORSAL									
EXTREMITIES	UPPER									
	LOWER									

18. ☐ DROWNED

19. ☐ ASPHYXIATED

20. SHOCK: ☐ MILD ☐ MODERATE ☐ SEVERE

21. EXPOSURE: ☐ MILD ☐ MODERATE ☐ SEVERE

22. ☐ BURNS ☐ FROST BITE

DEGREE	1ST	2ND	3RD	1ST	2ND	3RD	1ST	2ND	3RD
AREA	HEAD (ventral)	Dorsal)		TRUNK (ventral	Dorsal)		ARMS		LEGS

23. EXTENT OF CARBONIZATION: ☐ NONE ☐ COMPLETE

ARE TISSUE SPECIMENS OBTAINABLE? ☐ YES ☐ NO

NOTE: Attach a detailed narrative account of injuries, cause, structures causing injury, magnitudes of force, and include whether ANTE- OR POST-MORTEM if determined. It is necessary to give as clear a picture of injury cause and sequence as possible.

24. ADMITTED TO SICK LIST? IF YES, GIVE DIAGNOSIS: ☑ YES ☐ NO (b) (6)

25. DIAGNOSIS NO. (NAVMED P-124)

26. ESTIMATED STAY ON SICK [illegible] DAYS

27. GROUNDED? IF YES GIVE REASON: ☑ YES ☐ (b) (6)

28. ESTIMATED DURATION [illegible] DAYS

29. PRIMARY CAUSE OF DEATH (Use Basic Diagnostic Nomenclature, NAVMED P-124) NO.

30. SECONDARY CAUSE OF DEATH NO.

31. AUTOPSY PERFORMED? ☐ YES ☐ NO

32. PROTOCOL ☐ ATTACHED ☐ WILL BE FORWARDED

33. AUTOPSY CONDUCTED BY ☐ PATHOLOGIST ☐ FLIGHT SURGEON

IF FLIGHT SURGEON DOES AUTOPSY USE "AUTOPSY GUIDE FOR A/C ACCIDENT FATALITIES", AFIP. 1957.

34. SPECIMEN	TEST PERFORMED	RESULTS	SPECIMEN	TEST PERFORMED	RESULTS
BLOOD: 1			TISSUE: (CNS)		
2			MUSCLE		
3			VISCERA		
URINE			OTHER:		
G-I CONTENTS					

35. IF ULTRAVIOLET LIGHT OR OTHER SPECIALIZED INVESTIGATIVE PROCEDURES WERE USED AT THE MISHAP SITE OR AUTOPSY, LIST THEM IN THIS SPACE. FOR EACH ENTRY IN THIS SPACE A NARRATIVE ACCOUNT OF THEIR RESULTS AND INTERPRETATION WILL BE ATTACHED.

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D-60073

26. Labs timer

27. Manual power disconnect handle

28. Instrument panel - compass (133°), DME, Armament panel, turn bank indicator

29. Angle of attack indicator

30. Control used for setting fuel quantity system

31. Cockpit oxygen and "g" suit connector panel (oxygen switch on)

32. Stick control cable actuator

33. Right aileron

34. Windshield

35. Port slat

36* Small portion of wing fuel cell

37* One way check valve - wing

38. Round red rubber seal #516703 cure date October 1961

39. Fuselage - left side cockpit

40. Starboard elevator

41* Small piece of fuel hose

42* Small piece backing board

43. Left aileron tip

44. Oil tank

45. Fire detector box

46. Horizontal stablizer positioner

47-49* Flow dividers

50. Tail hook

51. Emergency generator

52. Part of wing fuel cell

53. Fuel line and fitting

54. Outside cover LOX container

55. Piece of elevator

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (VI)

56* Piece of fuel cell

57* Portion of fuel transfer pump

58* Small piece fuselage fuel cell

59. Starboard flap

60* Wing fuel filter

61* Two main fuel fittings

62. Throttle quadrant section

63* Aft section of main fuel cell

64. ASN-19 - ID 307/ARN

65. Port wing, canopy lock lever, emergency hydraulic handle

66. APA-89 parts

67. Rate of climb indicator (3000 min decent)

68. Air conditioning parts

69. Radio gear

70. Starboard catapult hook assembly

71. ASQ-17

72* Two fuel fittings #1A880

73. Port speed brake

74. Drop tank parts

75* Remote fuel shut-off valve A6-7544413507 fuel line

76* PRESSURE FUEL VALUE

77. Two pilon covers

78. Main mount

79. Port strut and assembly

80* Small fuel hose

81* Small piece backing board.

82* Small piece of fuel cell

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRAPH 70,
OPNAVINST 3750.6D

ENCLOSURE (III)

83* Small pieces of backing board

84* Main fuel cell cap and cover - small piece of a/c skin attached

85. Section of drop tank

86* Large piece of fuselage cell

87. N.A.

88. Compressor blades

89* Fuel lines

90* Two flow dividers

91* Short fuel hose

92* Fuel transmitter valve

93* Top of fuel cell - mounting plate

94. Fuel cell cap and wing

95. Piece of compressor case

96* Small piece of fuel cell

97. Compressor blades

* Fuel system parts

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 5750.6D

ENCLOSURE (2)

STATEMENT OF CDR (b) (6) CONCERNING ACCIDENT INVOLVING A4D-2N BUNO 145066

I inspected aircraft BUNO 145066 A4D-2N prior to take-off on a routine bombing mission and found no discrepancies. Both external tanks were full and total fuel was 9400 pounds. All press to test lights were working. I made my take-off at about 1318 which was uneventful. Climb out was made at 310 knots to 20,000 feet. I cruised at 20,000 feet, .68 mach, 94% fuel flow was about 3000 pounds per hour. I started fuel transfer at 4500 pounds indicated fuel. The fuel gauge went up to 5300 pounds and remained there. My wingman and I were homing on the Thermal VORTAC and about 30 minutes out from China Lake when he reported that I was losing fuel. Thinking that I might be overflowing due to fuel transfer I shut off my transfer pressure switch. My wingman then reported that I was still losing fuel and that it was coming from my wing roots. My fuel gauge had dropped to 5000 pounds by this time. I told my wingman that my fuel was dropping and that I would try to go into El Centro. The fuel was then noted to be 4700 pounds. I turned the pressure switch back on to attempt to transfer more fuel into my main tank. We then switched to Channel 2 and attempted to get El Centro tower. I could not get the tower on Channel 2 so switched to GUARD. My fuel then was reading 4000 pounds. My wingman contacted El Centro Tower and cleared me for a straight in approach.

My fuel went to 1000 pounds and I told my wingman that I dindn't think I could make El Centro. The engine then flamed out. The altitude was approximately 15,000. Fuel quanity was still 1000 pounds, fuel flow was 0 and the RPM was at START. I tried to re-light using main generator and primary fuel control which was unsuccessful. I lost electrical power during the re-light attempt. I pulled the emergency drop out generator and regained electrical power. I called my wingman and told him

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (IV)

that I was flamed out. Then I went to manual fuel control and made two re-start attempts with no luck. Fuel quantity still read 1000 pounds and I do not remember seeing the fuel transfer light on.

I then told my wingman that I was going to eject after I had descended below the clouds and when not over the lake. Just before I ejected I noted my airspeed was about 280 knots and my altitude was about 7,000 feet. Just prior to ejection I pointed the airplane toward some open fields and trimed nose down. I told my wingman that my feet were on the rudder pedals and "adios". I pulled the curtain with both hands and was ejected with no problems. Seat separation went as advertised and the parachute deployed on schedule. Everything seemed normal except that I seemed to have two small parachutes instead of one. I guess a shroud line was over the top of the chute. I was swinging back and forth and I pulled on one of the risers to stop this but one side of the chute acted like it was going to dump so I stopped pulling on the riser. I released the left leg strap and the survival gear swung to my right side. When I got near the ground I held on to the risers and put my legs together. My rate of descent seemed quite rapid during the last couple of seconds. I was going to try to roll on impact and release the quick disconnects as soon as I hit; however, I hit so hard I didn't even move from point of impact. I could not breath and my right foot hurt quite a bit. I got on my knees and released the risers as soon as I could. The surface wind was calm and I was not dragged. I then stood on one leg and signaled my wingman that I was okay. I was picked up by a farmer and transferred to a police car for the trip to NAF, El Centro.

I do not know how this accident could have been prevented or foreseen.

(b) (6) [redacted]

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (IV)

Statement of LT (b) (6) USN, (b) (6) concerning accident involving A4D-2N BUNO 145066

At approximately 1315, 25 September 1962, CDR (b) (6) in XE-2 (145066) and I departed NAF, China Lake on a scheduled flight to the Yuma target complex. At approximately 1345, we were proceeding at 20,000 feet heading 130° M approximately 5 miles west of Thermal Vartoc when I noticed fuel streaming from the lead airplane. It started suddenly and appeared to be excessive for overboard dump associated with fuel transfer from the drop tanks.

I called XE-2 and informed him of the condition, he acknowledged by switching his transfer switch off. After 30 seconds, I reported that the fuel stream was increasing and that it looked like a fuel leak. I moved in under XE-2 and observed fuel streaming out heavily around the centerline bomb rack. I reported to XE-2 that he may have lost the plub in the rack and better head for a field. I moved over to the right side of XE-2 and reported fuel streaming along the wing root. On checking the port side of the airplane, there appeared to be no leak on that side. We started descending at this time.

CDR (b) (6) acknowledged saying he had 4000 lbs and was headed for El Centro. We switched to 340.2 MC and attempted contact with El Centro tower; XE-2 first with no results and I second with negative results. I told XE-2 I was switching to Guard frequency, he acknowledged. El Centro tower came up on Guard after one call, was informed of problem and rogered duty Runway 8. At this time, I heard XE-2 reported "1000 lbs". I relayed El Centro duty Runway and "standing by", and noticed XE-2 dropping back. We were passing through approximately 10,000 feet at this time.

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ENCLOSURE (V)

I dropped speed brakes to get back alongside XE-2 and heard "Mayday, flamed out, I don't think I can get it started again". I rogered. CDR (b) (6) called "I'm getting out, got my feet on the pedals, keep me in sight". I rogered, and reduced power further as I still had not gotten abeam of XE-2. At the time of ejection, I had a clear view of the aircraft, my position being slightly ahead and about 500 feet to the starboard side. I observed the canopy jettison, followed very closely by the seat. The seat and pilot separated and the parachute opened shortly thereafter. The ejection sequence appeared normal in every respect. The PRT-3 beacon began "beeping" loud and clear. I commenced a tight port orbit around the descending parachute and called "Mayday" - giving approximate position of crash. Several other stations acknowledged including El Centro and a UF in the area. I estimate our altitude at time of ejection was between 5 and 8 thousand feet. The UF called in, saying he had a puff of smoke in sight but nothing else. I gave him my position relative to the smoke. The UF acknowledged that he had me in sight. I reported the parachute's position in the center of my orbit and he rogered saying he had it in sight. At this time, I was at one thousand feet and saw the UF come across the shoreline of the Salton Sea from the north at a lower altitude. I observed the pilot land near a dirt road about a mile and a half south of the Salton Sea about one mile east of U.S. Highway 99. The UF was orbiting at about 100 feet and made repeated low passes over the pilot initially reporting to El Centro tower that the pilot appeared in good condition with the exception of an injured leg. The parachute was on the ground next to the pilot - the PRT beacon was still broadcasting loud and clear.

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ENCLOSURE (7)

During the parachute's descent, I looked to the south to see where the airplane had crashed and observed a thin column of smoke below a large puff of smoke over the crash site. I missed the actual impact by several seconds. The crash was in the middle of a field and did not appear to have been close enough to any roads or buildings to have caused any damage. I did not pay any more attention to the crash site until I was leaving the area later.

I circled the pilot on the ground at 1500 feet, the UF did the same at about 300 feet. Approximately 15 minutes later, an old car or jeep came up the dirt road and the pilot with parachute got into this vehicle and proceeded toward another dirt road towards a farm house. The UF stayed with this car orbiting overhead. I called XE-9, another squadron plane in the vicinity, and was told that the pilot was being taken to the town of Westmoreland for pick-up.

I made one pass over the crash sight observing a hole in the ground with twenty or more people milling around it.

I then proceeded back to NAF, China Lake.

I have been a designated Naval Aviator for five years and have 1500 flight hours, 850 in A4D-type aircraft.

(b) (6) [redacted]

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (2)

Tape Recording of A4D BuNo 145066, Pilot Cdr. (b) (6) VX-5, Recorder No. 5

Frequency 243, Omc Tape time 1251, NAF El Centro tower.

1251	Mystify 8	El Centro Tower, El Centro Tower, Mystify 8 on Guard over.
	NJK Tower	Mystify 8, Tower go ahead
	Mystify 8	This is Mystify 8 in company with Mystify 2 ALPHA 4 DELTA, Mystify 2 has a bad fuel leak, he's down to 1000 pounds and he's trying to make a stright in to your field. Were over the Salton Sea at this time, we'd like immediate clearance direct to your field, over.
	NJK Tower	Mystify 8 roger, our duty runway is runway 8 wind Southeast 5, altimeter 2983, report when closer to the field.
	Mystify 8	Thank you
	Mystify 8	Mystify 2 from 8, your cleared direct to El Centro its runway 8 the duty runway.
	NJK Tower	Mystify 8 El Centro.
	Mystify 8	El Centro standby, Mystify 2 this is 8 your cleared direct El Centro, over.
	Mystify 2	This is Mystify 8 I've flamed out, can't get a relight I'm gonna bail out.
	Mystify 8	Ah roger.
	Mystify 2	Uh you got me in sight
	Mystify 8	I have you in sight
	Mysitfy 2	Ok, I'm gonna un pull the curtain, I've got my feet on the - - - - -Adios.
	NJK Tower	8, This is El Centro you got time to give me a position.
	Mystify 8	Roger, mayday mayday uh pilot of Mystify 2 has bailed out.
	NJK Tower	This is El Centro, have you got time to give me a approximate location.
	Mystify 8	Right, about uh 3 miles South of the uh Salton sea uh my Tacan is not working at this time I'm in the area.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (VI)

NJK Tower	Roger 8, do you have fuel to orbit the area.
Mystify 8	Thats affirmative lots of fuel uh his beacon is working at this time, do you hear it on Guard.
NJK Tower	Thats affirm, we are copying his uh PRT-49 and remain in the area, we'll have aircraft on the way.
Mystify 8	8 Wilco
NJK Tower	Standby this frequency we'll be up this frequency also for any further instructions from you.
Mystify 8	Unknown (Right or Roger).
Mystify 8	Go ahead ---- I can't hear you, the PRT is drowning you outplease --- say again.
NJK Tower	Coast Guard 7226, Coast Guard 7226 this is El Centro on Guard if you hear give El Centro a call on 360.2.
NJK Tower	Coast Guard 7226, Coast Guard 7226 this is El Centro if you hear, give us a call please 360.2.
CG 7226	El Centro, Coast Guard 7226 on Guard.
NJK Tower	7226, El Centro did you copy the mayday.
CG 7226	That is affirmative, I have a, I'm off the water at El Centro, will procede to the South end. I have one bit of smoke in fromt of me, do you have amplifing information.
NJK Tower	Mystify 8, Centro are you uh copying this.
Mystify 8	Thats affirm, this is 8, the parachute is coming down just to the Northwest of that puff of smoke.
CG 7226	Roger, understand, just to the Northwest of that puff of smoke. I'll keep my eye for it uh, I'm a uh UF type of aircraft.
Mystify 8	Roger, I'm at 1800' he's right now over highway 99 just south of the Salton Sea.
CG 7226	Roger, I have you in sight, are you circling him in a left hand turn.
Mystify 8	Thats affirmative, he is right in the middle of the circle.

Unknown	One reading Guard
CG 7226	El Centro this is 7226, do you have units you can put on the highway. This man is coming right into the highway area.
NJK Tower	7226, El Centro, thats affirm. You gonna land on the Highway.
CG 7226	7226 the man is on the ground. He is on the ground.
NJK Tower	Roger, understand, on the ground, roger you'll be in the area is that correct.
CG 7226	El Centro Tower this 7226 do you read.
NJK Tower	7226, El Centro on Guard go ahead.
CG 7226	Roger, the man is on the ground and uh is your Tacan working on 19.
NJK Tower	Roger 7226 our Tacan El Centro has been changed is now 106 the Tacan channel.
CG 7226	Roger, I'd better get the tower frequency, the man is up on his feet now, he's apparently ok.
NJK Tower	Roger, you can get tower on 360.2 if you like.
CG 7226	El Centro Tower, 7226 ------ El Centro Tower, 7226.
NJK Tower	7226, El Centro go ahead.
CG 7226	Roger, what are your intentions.
NJK Tower	7226 wait one.
CG 7226	Tower this is 7226, the man is apparently injured uh his one leg uh I'm gonna look around for a place to put this bird down, do you have any Helicopters in the area.
NJK Tower	226 uh we are trying to contact our Air Force, they have a Helicopter and Yuma search and rescue is launching a Helicopter from their base uh right now we're trying to get ours up and they have also notified San Diego Coast Guard and advised them of the situation.

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ACCORDANCE WITH PARAGRAPH 70,
(3) OPNAVINST 3750.6D.

ENCLOSURE (VII)

CG 7226	This is 226 Roger, I thing you can get a ground unit here faster than anything. If you have an ambulance you can put it on the road.
NJK Tower	ROGER, WE'll get an ambulance underway right away.
CG 7226	226

TAPE TIME 1264

Unknown	Mystify 8, Mystify 1 over.
Unknown	Go ahead ten.
Unknown	Whats the position of wreckage over.
Unknown	The wreckage is about 8 miles to the Southeast of the South end of the Salton Sea.
Unknown	Roger.
Mystify 8	From Mystify 8 can you give me a quick rundown on the condition of the pilot, over.

TAPE TIME 1288

Unknown	Mystify 1, Mystify 8, are you still on this frequency over.
Unknown	Mystify 8, Mystify 9.
Unknown	Roger 9 lets go button 4.
Unknown	Roger, button 4.

I certify this to be a true transcript of the NAF, El Centro Tower tape, as delivered to me by LCDR (b) (6) , NAF, El Centro, Operations Officer

(b) (6)

LCDR USN
Senior Member

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (VI)

PART VII - The Investigation

The initial phase of the investigation commenced with the arrival of the VX-5 Saftey Officer and Flight Surgeon at NAF, El Centro approximately three (3) hours after the accident. Initial questioning of the pilot was accomplished and arrangements made for photographic and guard services at the crash site.

Investigation of the crash site commenced on the following morning and preliminary effort was directed toward mapping the area and locating major aircraft components plus all components associated with the fuel system. This map is included as enclosure (6). The investigation was aided by Mr. (b) (6) of Douglas Aircraft Company and Mr. (b) (6) of Curtiss-Wright Corporation. LCDR (b) (6) of the Safety Center was also present. At the same time, a canvas of adjacent dwelling sites was made to locate witnesses. The area in which the pilot landed was surveyed by jeep and by air in an effort to locate the canopy and ejection seat. Thorough search of the field and manual excavation of the impact hole yielded approximately 70% of the bottom and top areas of the fuselage fuel cell, sections of the fuel boost pump and most of the fuel line fittings.

On 28 September, clean-up of the crash site was made by a crew from NAF, El Centro and the debris unloaded in the NAF salvage yard. This debris was searched again for additional parts.

The results of the investigation in the El Centro area ascertained that:

(1) No ground eye witnesses to the actual ejection and subsequent impact of the airplane could be located.

(2) No indication of in-flight fire could be found. (Portions of the fire detection system were recovered and were properly assembled).

(3) The ejection seat and airplane canopy could not be located. Civil law enforcement agencies were alerted and requested to notify NAF, El Centro in the event that information materialized regarding either location of the canopy and ejection seat or eye witnesses.

(4) Examination of the recovered fragments of the fuselage fuel cell indicated fuel activation of parts of the bottom of the fuel cell prior to impact.

All recovered fuel system components were taken to Douglas Aircraft Company at Long Beach for assembly and analysis. Douglas Aircraft and Firestone Rubber provided engineering assistance for laboratory analysis and reconstruction of the fuselage fuel cell. The result of these steps are summarized as follows:

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70 OPNAVINST 3750.6D.

ENCLOSURE (2)

(1) That fuel activation and tank separation of portions of the lower fuselage fuel cell was confirmed as having occurred prior to the accident.

(2) That deformation of the fuel cell in the boost pump area indicated that the aft portion of the boost pump was sagging approximately one inch.

(3) That the fuel filter circumferential weld was broken.

(4) That material found in one of the fuel pump passageways was fiberglass.

(5) That no foreign material was found in the Fuel Filter.

An investigative trip was made to the O & R facility at NAS Alameda to trace the history of this particular fuselage fuel cell. History determination was not possible; however, the aircraft did receive a reworked fuel cell during the last PAR period. It is to be noted that fuselage fuel cells and backing boards are not always removed during a PAR period.

The aircraft did not have the following service changes incorporated:

66A Engine Accessories-Modification of The Engine Intake Air Duct Seal

118 Engine Accessories-Provisions For Pressure Filling 4 Gallon Oil Tank.

149 Armament-Installation of Aero 3A Fuze Power Supply with ASM-N-7

156A Furnishings-Provisions for Thermal Radiation Closure

163 Electrical-Addition of Aft Antennas for IFF and TACAN

171 Electrical-Modification of the Gun Charging Circuit

172A Fuselage-Installation of JATO Provisions

177A Armament-Installation of Bull-Pup Transmitter Circuit Time Delay

181 Electrical-Installation of Anti-Collosion Beacon

183 Hydraulic System-Modification of Catapult Hooks

184A Armament-Installation of Ammo Link & Brass Chutes

186 Avionics-Installation of Provisions for TPQ-10 Ground Control Bombing System.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAV INST 3750.6D

188A	Avionics-Installation of Remote AN/ARC-27 Indicator
200-2	Avionics-Installation of Radar Altimeter and Bearing, Distance and Heading Indicator
201	Electrical-Change to Primary Electrical Power Distribution System
203	Avionics-Installation of Sidewinder Capability
206	Hydraulic System-Installation of Fire Protection Spray Shield
207	Electrical-Modification of boost Pump Circuit
215	Fuel System-Removal of Fuel Cell Baffles
217	Instruments-Installation of Elapsed Time Clock Provisions
218	Electrical-Installation of Electric Windshield Wiper
219	Avionics-Installation of Remote Attitude Indicating System
220	Avionics-Modification of Angle of Attack Transducer
221	Electrical-Installation of Cockpit High-Intensity Floodlighting
222	Nose Landing Gear-Mod of Fuselage Fuel Tank Rupture Prevention

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRAPH 70,
OPNAVINST 3750.6D.

ENCLOSURE ( )
IMPACT CRATER HEADING 142°M
SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (2a)

ENCLOSURE ( )

IMPACT AREA - LOOKING IN DIRECTION OF IMPACT.

SPECIAL HANDLING REQUIR[illegible]N ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (16)

ENCLOSURE (3)
AFT ENGINE SECTION LOCATED ON FORWARD EDGE OF IMPACT CRATER.
SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (Id)

ENCLOSURE ([redacted])

BOTTOM OF FUEL CELL. (a) CHALKED AREA SHOWS RECOVERED PIECES OF CELL. (b) SINGLE "X" SHOWS ONE ACTIVATED AREA. (c) MULTI "X" SHOWS AREA BOTH SEPARATED AND ACTIVATED. (d) ARROWS SHOW ACTIVATED AND DEFORMED AREA. (e) ACTIVATED AREA (f) FORWARD

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 10, OPNAVINST 3750.6D.

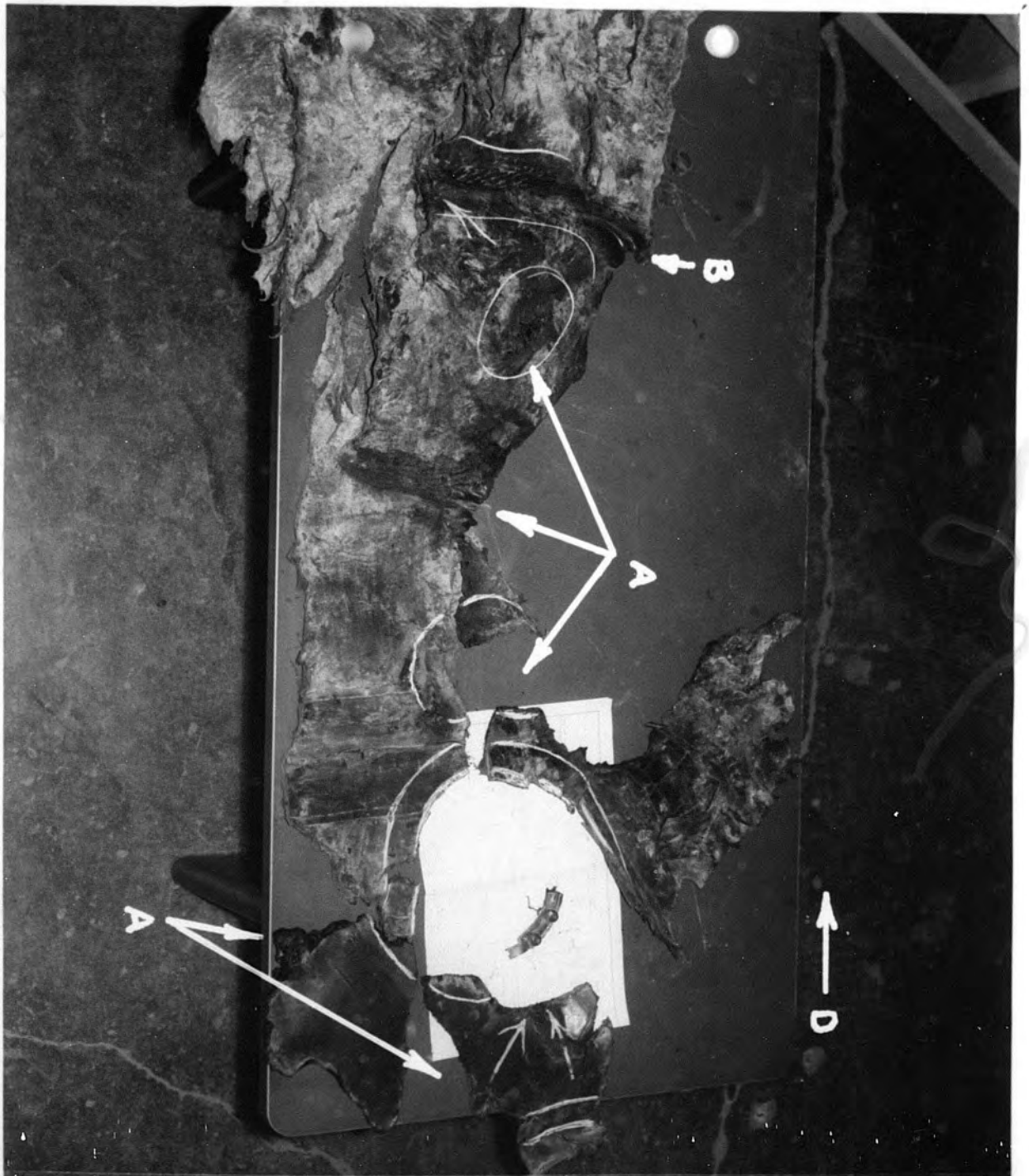
ENCLOSURE (1e1)

ENCLOSURE (2)

BOTTOM OF FUEL CELL - OUTSIDE. (a) ACTIVATION (b) ACTIVATION AND SEPARATION (c) FORWARD (d) DEFORMATION AND ACTIVATION.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 0, OPNAVINST 3750.6D.

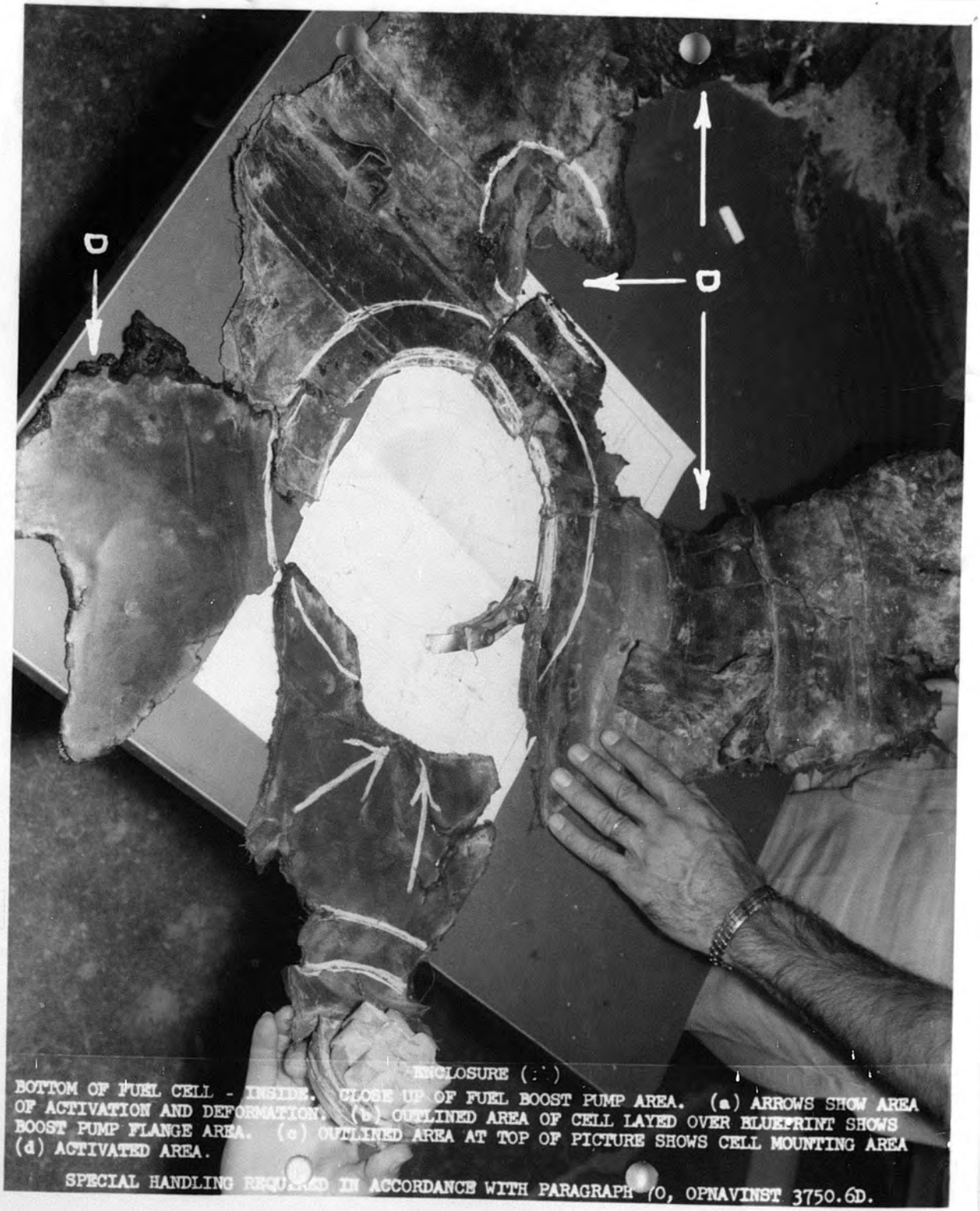
ENCLOSURE (2)



ENCLOSURE ( )

BOTTOM OF FUEL CELL - INSIDE. ARROWS SHOW ACTIVATED AND DEFORMED AREA. (a) ACTIVATED AREA (b) ACTIVATION AND SEPARATION (d) FORWARD.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.



ENCLOSURE (7)

BOTTOM OF FUEL CELL - INSIDE. CLOSE UP OF FUEL BOOST PUMP AREA. (a) ARROWS SHOW AREA OF ACTIVATION AND DEFORMATION. (b) OUTLINED AREA OF CELL LAYED OVER BLUEPRINT SHOWS BOOST PUMP FLANGE AREA. (c) OUTLINED AREA AT TOP OF PICTURE SHOWS CELL MOUNTING AREA (d) ACTIVATED AREA.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 10, OPNAVINST 3750.6D.

ENCLOSURE (7A)

ENCLOSURE (2)

BOTTOM OF FUEL CELL - FORWARD OF BOOST PUMP AREA. A. ACTIVATION AND SEPARATION. B. ACTIVATION C. FORWARD

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D

ENCLOSURE (5)

DEFORMATION OF FUEL CELL (INSIDE) JUST AFT OF THE BOOST PUMP. ARROWS SHOW ACTIVATED AND DEFORMED AREA

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D

ENCLOSURE (5)

ENCLOSURE (3)

DEFORMATION OF FUEL CELL JUST AFT OF BOOST PUMP. ARROWS SHOW ACTIVATED AND DEFORMED AREA

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 10, OPNAVINST 3750.6D.

ENCLOSURE (7K)

LEGEND FOR WRECKAGE DIAGRAM

1. Alternator
2* Portion of fuel line
3* Small part fuel tank baffle (burnt)
4. Hydraulic activator
5* Small part of fuel cell
6. Piece of rudder
7* Piece of backing board
8* Part of fuel cell
9. LOX container (inside)
10* Small part of fuel cell
11* Small part of fuel cell
12. Portion of pilots knee board
13* Small portion of fuel cell
14* Piece of backing board (burnt)
15. Left airleron
16. Stator blades - 1st stage
17. Stator blades - aft states
18. Starboard portion of fuselage (oil vent)
19. Gunsight
20. Stator blades
21. N.A.
22* Fuel float shut-off casing
23. Piece of compressor case
24* Fuel Level Control valve
25. Bomb sway brace

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

LOSURE (II)

26. Labs timer

27. Manual power disconnect handle

28. Instrument panel - compass (133°), DME, Armament panel, turn bank indicator

29. Angle of attack indicator

30. Control used for setting fuel quantity system

31. Cockpit oxygen and "g" suit connector panel (oxygen switch on)

32. Stick control cable actuator

33. Right aileron

34. Windshield

35. Port slat

36* Small portion of wing fuel cell

37* One way check valve - wing

38. Round red rubber seal #516703 cure date October 1961

39. Fuselage - left side cockpit

40. Starboard elevator

41* Small piece of fuel hose

42* Small piece backing board

43. Left aileron tip

44. Oil tank

45. Fire detector box

46. Horizontal stablizer positioner

47-49* Flow dividers

50. Tail hook

51. Emergency generator

52. Part of wing fuel cell

53. Fuel line and fitting

54. Outside cover LOX container

55. Piece of elevator

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

LOSURE (II)

56* Piece of fuel cell

57* Portion of fuel transfer pump

58* Small piece fuselage fuel cell

59. Starboard flap

60* Wing fuel filter

61* Two main fuel fittings

62. Throttle quadrant section

63* Aft section of main fuel cell

64. ASN-19 - ID 307/ARN

65. Port wing, canopy lock lever, emergency hydraulic handle

66. APA-89 parts

67. Rate of climb indicator (3000 min decent)

68. Air conditioning parts

69. Radio gear

70. Starboard catapult hook assembly

71. ASQ-17

72* Two fuel fittings #1A880

73. Port speed brake

74. Drop tank parts

75* Remote fuel shut-off valve A6-7544413507 fuel line

76* PRESSURE FUEL VALUE

77. Two pilon covers

78. Main mount

79. Port strut and assembly

80* Small fuel hose

81* Small piece backing board.

82* Small piece of fuel cell

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRAPH 70,
OPNAVINST 3750.6D

ENCLOSURE (II)

83* Small pieces of backing board

84* Main fuel cell cap and cover - small piece of a/c skin attached

85. Section of drop tank

86* Large piece of fuselage cell

87. N.A.

88. Compressor blades

89* Fuel lines

90* Two flow dividers

91* Short fuel hose

92* Fuel transmitter valve

93* Top of fuel cell - mounting plate

94. Fuel cell cap and wing

95. Piece of compressor case

96* Small piece of fuel cell

97. Compressor blades

* Fuel system parts

SPECIAL HANDLING REQUIRED IN
ACCORDANCE WITH PARAGRPAH 70,
OPNAVINST 3750.6D

ENCLOSURE (II)

PART V- The accident

CDR (b) (6) was assigned A4D-2N BUNO 145066 (MYSTIFY 2) on 25 September 1962 for an authorized project flight concerned with the prosecution of CNO assigned project Op/V269. Origin of the flight was NAF, China Lake, Calif., and the flight mission called for glide bombing on target 103A located in the vicinity of NAF, El Centro, Calif. and on target "Candid Camera" in the Yuma, Arizona Area

CDR (b) (6) flight leader and LT (b) wingman, conducted a mission brief and received a meterological brief prior to take-off.

The pilot, CDR (b) (6) conducted a normal pre-flight of the assigned airplane. External configuration of the airplane was two full 300 gallon drop tanks and a centerline practice bomb rack with 4 MK 89 practice bombs (56# weight each).

Take-off was made at 1318 PDT followed by the wingman in MYSTIFY 8, an A4D-2N. After a running rendezvous the flight climbed out on course toward the El Centro target. En route cruise was made at 20,000 feet, 0.68 Mach. Weather en route was generally clear.

As the flight passed about 5 miles to the west of Thermal Vortac the wingman noticed fuel streaming from the lead airplane. The time was approximately 1345 PDT. The flight leader was informed of the situation and turned the drop tank transfer switch off as it is not unusal for A4D type airplanes to vent some fuel overboard when transferring fuel from the drop tanks to the wing tank. After another 30 seconds had elapsed the wingman reported the overboard fuel flow rate increasing. The wingman moved beneath the lead airplane for closer examination and observed fuel streaming out heavily around the centerline bomb rack The wingman checked the right side of the airplane and reported fuel streaming along the wing root. The port side was also checked but there was no visible fuel stream on that side. However, it is noted that from this position the wingman was looking directly into the sun.

When the fuel streaming had been reported to the pilot his internal fuel reading was at 5,300 pounds, having commenced fuel transfer from the drop tanks at an indicated internal fuel reading of 4,500 pounds. There was at this time, approximately 6700 pounds total fuel aboard. After securing the drop tank transfer the internal fuel reading was down to 5,00 pounds. As the internal fuel indication continued to decrease the pilot then resumed transfer from the drop tanks. The internal fuel reading was now at 4,700 pounds The flight commenced descent in order to get below the scattered to broken stratus clouds in the El Centro area. Bases of the clouds were at approximately 6,000 feet During this time an attempt was made to contact El Centro on 340.2MC. This effort was not successful so the flight switched to 243.0 MC (GUARD) and contacted El Centro Tower. The transcript of the Guard transmission is included as enclosure (5). By the time the tower was contacted, indicated internal fuel quanitity was at 4,000 pounds. This reading indicated

a loss of at least 1,300 pounds of fuel in less than 2 minutes. Immediately thereafter the indicated internal fuel reading dropped to 1,000 pounds and the engine flamed out. The flight had been informed by El Centro tower of the duty runway, wind and altimeter setting when the flight leader reported the flame-out and that he could not obtain a re-light. The indicated internal fuel quantity remained at 1,000 pounds, fuel flow was zero and the RPM was at START. The pilot attempted a re-light on MAIN generator and PRIMARY fuel control which was unsuccessful. Electrical power was lost during re-light attempt. The drop out generator was deployed, electrical power regained and the wingman informed of the flame-out. Two more re-light attempts were made in MANUAL fuel control; however no fuelflow could be obtained and the throttle was out of the OFF position. The internal fuel quantity indicator remained at 1,000 pounds and at no time was a Fuel Transfer Warning light or Fuel Boost Pump failure noted. The flame out occurred at approximately 15,000 feet. After the three unsuccessful re-light attempts the pilot decided to eject, and informed the wingman of his intention. The last noted altitude by the pilot prior to ejection was 7,000 feet and airspeed at 280 KIAS. The airplane was pointed toward open fields, some nose-down trim applies to the airplane followed by ejection through actuation of the face curtain. The ejection was about 2 miles south of the south shore line of the Salton Sea.

The ejection sequence appeared to be normal and the wingman made a MAYDAY report. The parachute opening was normal although the pilot did have a "line over" (riser line over the parachute canopy). The pilot made one attempt to correct the "line over" which was unsuccessful. He released the left leg strap of the survival gear and then pulled the manual D ring of the parachute during descent to insure separation from the parachute canopy after landing.

During descent the wingman maintained visual contact with the parachute and established radio contact with a Coast Guard UF that was in the immediate area. The UF was given the location of the pilot by the wingman and coupled with the signal of the PRT-3 beacon, the UF was able to arrive on the scene and sight the parachute before the pilot had landed.

The pilot landed on the edge of an irrigation ditch with greater force than anticipated. He released the rocket jet fasteners after impact and was not dragged by the parachute. Impact with the ground caused pain in the right foot of the pilot and winded him. He stood up on one leg after releasing the parachute and waved to the wingman.

Within 15 minutes a jeep arrived on the scene and the pilot was taken to a farm house. He transferred to a California Highway Patrol car and was driven to NAF, El Centro.

PART VI - Damage to Aircraft

The airplane suffered total destruction (see enclosure (8) (9) and (10)) as a result of initial impact and resultant fire. Airplane attitude at impact is estimated to have been 110° right wing down and 15° nose down, with the right wing tip contacting the ground first. Aircraft heading at impact was approximately 133°.

The main dispersal of the wreckage was scattered beyond the impact point covering an area of approximately 1000 feet in length and 450 feet in width; isolated parts were found as far as 2000 feet from the impact point. The impact crater was approximately 56 feet in length in a southeasterly direction, 24 feet in width, and varied in depth from negligible at initial impact at the northern end to 9 feet in depth at the southern end.

Due to total destruction of the aircraft, salvage of components was not feasible.

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STATEMENT OF CDR (b) (6) CONCERNING ACCIDENT INVOLVING A4D-2N BUNO 145066

I inspected aircraft BUNO 145066 A4D-2N prior to take-off on a routine bombing mission and found no discrepancies. Both external tanks were full and total fuel was 9400 pounds. All press to test lights were working. I made my take-off at about 1318 which was uneventful. Climb out was made at 310 knots to 20,000 feet. I cruised at 20,000 feet, .68 mach, 94% fuel flow was about 3000 pounds per hour. I started fuel transfer at 4500 pounds indicated fuel. The fuel gauge went up to 5300 pounds and remained there. My wingman and I were homing on the Thermal VORTAC and about 30 minutes out from China Lake when he reported that I was losing fuel. Thinking that I might be overflowing due to fuel transfer I shut off my transfer pressure switch. My wingman then reported that I was still losing fuel and that it was coming from my wing roots. My fuel gauge had dropped to 5000 pounds by this time. I told my wingman that my fuel was dropping and that I would try to go into El Centro. The fuel was then noted to be 4700 pounds. I turned the pressure switch back on to attempt to transfer more fuel into my main tank. We then switched to Channel 2 and attempted to get El Centro tower. I could not get the tower on Channel 2 so switched to GUARD. My fuel then was reading 4000 pounds. My wingman contacted El Centro Tower and cleared me for a straight in approach.

My fuel went to 1000 pounds and I told my wingman that I dindn't think I could make El Centro. The engine then flamed out. The altitude was approximately 15,000. Fuel quanity was still 1000 pounds, fuel flow was 0 and the RPM was at START. I tried to re-light using main generator and primary fuel control which was unsuccessful. I lost electrical power during the re-light attempt. I pulled the emergency drop out generator and regained electrical power. I called my wingman and told him

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (IV)

that I was flamed out. Then I went to manual fuel control and made two re-start attempts with no luck. Fuel quantity still read 1000 pounds and I do not remember seeing the fuel transfer light on.

I then told my wingman that I was going to eject after I had descended below the clouds and when not over the lake. Just before I ejected I noted my airspeed was about 280 knots and my altitude was about 7,000 feet. Just prior to ejection I pointed the airplane toward some open fields and trimed nose down. I told my wingman that my feet were on the rudder pedals and "adios". I pulled the curtain with both hands and was ejected with no problems. Seat separation went as advertised and the parachute deployed on schedule. Everything seemed normal except that I seemed to have two small parachutes instead of one. I guess a shroud line was over the top of the chute. I was swinging back and forth and I pulled on one of the risers to stop this but one side of the chute acted like it was going to dump so I stopped pulling on the riser. I released the left leg strap and the survival gear swung to my right side. When I got near the ground I held on to the risers and put my legs together. My rate of descent seemed quite rapid during the last couple of seconds. I was going to try to roll on impact and release the quick disconnects as soon as I hit; however, I hit so hard I didn't even move from point of impact. I could not breath and my right foot hurt quite a bit. I got on my knees and released the risers as soon as I could. The surface wind was calm and I was not dragged. I then stood on one leg and signaled my wingman that I was okay. I was picked up by a farmer and transferred to a police car for the trip to NAF, El Centro.

I do not know how this accident could have been prevented or foreseen.

(b) (6) [redacted]

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ENCLOSURE (III)

Statement of LT [redacted], USN, [redacted] concerning accident involving A4D-2N BUNO 145066

At approximately 1315, 25 September 1962, CDR [redacted] in XE-2 (145066) and I departed NAF, China Lake on a scheduled flight to the Yuma target complex. At approximately 1345, we were proceeding at 20,000 feet heading 130° M approximately 5 miles west of Thermal Vartoc when I noticed fuel streaming from the lead airplane. It started suddenly and appeared to be excessive for overboard dump associated with fuel transfer from the drop tanks.

I called XE-2 and informed him of the condition, he acknowledged by switching his transfer switch off. After 30 seconds, I reported that the fuel stream was increasing and that it looked like a fuel leak. I moved in under XE-2 and observed fuel streaming out heavily around the centerline bomb rack. I reported to XE-2 that he may have lost the plub in the rack and better head for a field. I moved over to the right side of XE-2 and reported fuel streaming along the wing root. On checking the port side of the airplane, there appeared to be no leak on that side. We started descending at this time.

CDR [redacted] acknowledged saying he had 4000 lbs and was headed for El Centro. We switched to 340.2 MC and attempted contact with El Centro tower; XE-2 first with no results and I second with negative results. I told XE-2 I was switching to Guard frequency, he acknowledged. El Centro tower came up on Guard after one call, was informed of problem and rogered duty Runway 8. At this time, I heard XE-2 reported "1000 lbs". I relayed El Centro duty Runway and "standing by", and noticed XE-2 dropping back. We were passing through approximately 10,000 feet at this time.

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ENCLOSURE (2)

I dropped speed brakes to get back alongside XE-2 and heard "Mayday, flamed out, I don't think I can get it started again". I rogered. CDR (b) (6) called "I'm getting out, got my feet on the pedals, keep me in sight". I rogered, and reduced power further as I still had not gotten abeam of XE-2. At the time of ejection, I had a clear view of the aircraft, my position being slightly ahead and about 500 feet to the starboard side. I observed the canopy jettison, followed very closely by the seat. The seat and pilot separated and the parachute opened shortly thereafter. The ejection sequence appeared normal in every respect. The PRT-3 beacon began "beeping" loud and clear. I commenced a tight port orbit around the descending parachute and called "Mayday" - giving approximate position of crash. Several other stations acknowledged including El Centro and a UF in the area. I estimate our altitude at time of ejection was between 5 and 8 thousand feet. The UF called in, saying he had a puff of smoke in sight but nothing else. I gave him my position relative to the smoke. The UF acknowledged that he had me in sight. I reported the parachute's position in the center of my orbit and he rogered saying he had it in sight. At this time, I was at one thousand feet and saw the UF come across the shoreline of the Salton Sea from the north at a lower altitude. I observed the pilot land near a dirt road about a mile and a half south of the Salton Sea about one mile east of U.S. Highway 99. The UF was orbiting at about 100 feet and made repeated low passes over the pilot initially reporting to El Centro tower that the pilot appeared in good condition with the exception of an injured leg. The parachute was on the ground next to the pilot - the PRT beacon was still broadcasting loud and clear.

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ENCLOSURE (IX)

During the parachute's descent, I looked to the south to see where the airplane had crashed and observed a thin column of smoke below a large puff of smoke over the crash site. I missed the actual impact by several seconds. The crash was in the middle of a field and did not appear to have been close enough to any roads or buildings to have caused any damage. I did not pay any more attention to the crash site until I was leaving the area later.

I circled the pilot on the ground at 1500 feet, the UF did the same at about 300 feet. Approximately 15 minutes later, an old car or jeep came up the dirt road and the pilot with parachute got into this vehicle and proceeded toward another dirt road towards a farm house. The UF stayed with this car orbiting overhead. I called XE-9, another squadron plane in the vicinity, and was told that the pilot was being taken to the town of Westmoreland for pick-up.

I made one pass over the crash sight observing a hole in the ground with twenty or more people milling around it.

I then proceeded back to NAF, China Lake.

I have been a designated Naval Aviator for five years and have 1500 flight hours, 850 in A4D-type aircraft.

(b) (6) [redacted]

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Tape Recording of A4D BuNo 145066, Pilot Cdr. (b) (6) VX-5, Recorder No. 5

Frequency 243, Cmc Tape time 1251, NAF El Centro tower.

1251	Mystify 8	El Centro Tower, El Centro Tower, Mystify 8 on Guard over.
	NJK Tower	Mystify 8, Tower go ahead
	Mystify 8	This is Mystify 8 in company with Mystify 2 ALPHA 4 DELTA, Mystify 2 has a bad fuel leak, he's down to 1000 pounds and he's trying to make a stright in to your field. Were over the Salton Sea at this time, we'd like immediate clearance direct to your field, over.
	NJK Tower	Mystify 8 roger, our duty runway is runway 8 wind Southeast 5, altimeter 2983, report when closer to the fieid.
	Mystify 8	Thank you
	Mystify 8	Mystify 2 from 8, your cleared direct to El Centro its runway 8 the duty runway.
	NJK Tower	Mystify 8 El Centro.
	Mystify 8	El Centro standby, Mystify 2 this is 8 your cleared direct El Centro, over.
	Mystify 2	This is Mystify 8 I've flamed out, can't get a relight I'm gonna bail out.
	Mystify 8	Ah roger.
	Mystify 2	Uh you got me in sight
	Mystify 8	I have you in sight
	Mysitfy 2	Ok, I'm gonna un pull the curtain, I've got my feet on the - - - - -Adios.
	NJK Tower	8, This is El Centro you got time to give me a position.
	Mystify 8	Roger, mayday mayday uh pilot of Mystify 2 has bailed out.
	NJK Tower	This is El Centro, have you got time to give me a approximate location.
	Mystify 8	Right, about uh 3 miles South of the uh Salton sea uh my Tacan is not working at this time I'm in the area.

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ENCLOSURE (VII)

NJK Tower	Roger 8, do you have fuel to orbit the area.
Mystify 8	Thats affirmative lots of fuel uh his beacon is working at this time, do you hear it on Guard.
NJK Tower	Thats affirm, we are copying his uh PRT-49 and remain in the area, we'll have aircraft on the way.
Mystify 8	8 Wilco
NJK Tower	Standby this frequency we'll be up this frequency also for any further instructions from you.
Mystify 8	Unknown (Right or Roger).
Mystify 8	Go ahead ---- I can't hear you, the PRT is drowning you outplease --- say again.
NJK Tower	Coast Guard 7226, Coast Guard 7226 this is El Centro on Guard if you hear give El Centro a call on 360.2.
NJK Tower	Coast Guard 7226, Coast Guard 7226 this is El Centro if you hear, give us a call please 360.2.
CG 7226	El Centro, Coast Guard 7226 on Guard.
NJK Tower	7226, El Centro did you copy the mayday.
CG 7226	That is affirmative, I have a, I'm off the water at El Centro, will procede to the South end. I have one bit of smoke in fromt of me, do you have amplifing information.
NJK Tower	Mystify 8, Centro are you uh copying this.
Mystify 8	Thats affirm, this is 8, the parachute is coming down just to the Northwest of that puff of smoke.
CG 7226	Roger, understand, just to the Northwest of that puff of smoke. I'll keep my eye for it uh, I'm a uh UF type of aircraft.
Mystify 8	Roger, I'm at 1800' he's right now over highway 99 just south of the Salton Sea.
CG 7226	Roger, I have you in sight, are you circling him in a left hand turn.
Mystify 8	Thats affirmative, he is right in the middle of the circle.

CG 7226	This is 226 Roger, I thing you can get a ground unit here faster than anything. If you have an ambulance you can put it on the road.
NJK Tower	ROGER, WE'll get an ambulance underway right away.
CG 7226	226

TAPE TIME 1264

Unknown	Mystify 8, Mystify 1 over.
Unknown	Go ahead ten.
Unknown	Whats the position of wreckage over.
Unknown	The wreckage is about 8 miles to the Southeast of the South end of the Salton Sea.
Unknown	Roger.
Mystify 8	From Mystify 8 can you give me a quick rundown on the condition of the pilot, over.

TAPE TIME 1288

Unknown	Mystify 1, Mystify 8, are you still on this frequency over.
Unknown	Mystify 8, Mystify 9.
Unknown	Roger 9 lets go button 4.
Unknown	Roger, button 4.

I certify this to be a true transcript of the NAF, El Centro Tower tape, as delivered to me by LCDR (b) (6) NAF, El Centro, Operations Officer.

(b) (6)
LCDR USN
Senior Member

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ENCLOSURE (VII)

PART VII - The Investigation

The initial phase of the investigation commenced with the arrival of the VX-5 Saftey Officer and Flight Surgeon at NAF, El Centro approximately three (3) hours after the accident. Initial questioning of the pilot was accomplished and arrangements made for photographic and guard services at the crash site.

Investigation of the crash site commenced on the following morning and preliminary effort was directed toward mapping the area and locating major aircraft components plus all components associated with the fuel system. This map is included as enclosure (6). The investigation was aided by Mr. (b) (6) of Douglas Aircraft Company and Mr. (b) (6) of Curtiss-Wright Corporation. LCDR (b) (6) of the Safety Center was also present. At the same time, a canvas of adjacent dwelling sites was made to locate witnesses. The area in which the pilot landed was surveyed by jeep and by air in an effort to locate the canopy and ejection seat. Thorough search of the field and manual excavation of the impact hole yielded approximately 70% of the bottom and top areas of the fuselage fuel cell, sections of the fuel boost pump and most of the fuel line fittings.

On 28 September, clean-up of the crash site was made by a crew from NAF, El Centro and the debris unloaded in the NAF salvage yard. This debris was searched again for additional parts.

The results of the investigation in the El Centro area ascertained that:

(1) No ground eye witnesses to the actual ejection and subsequent impact of the airplane could be located.

(2) No indication of in-flight fire could be found. (Portions of the fire detection system were recovered and were properly assembled).

(3) The ejection seat and airplane canopy could not be located. Civil law enforcement agencies were alerted and requested to notify NAF, El Centro in the event that information materialized regarding either location of the canopy and ejection seat or eye witnesses.

(4) Examination of the recovered fragments of the fuselage fuel cell indicated fuel activation of parts of the bottom of the fuel cell prior to impact.

All recovered fuel system components were taken to Douglas Aircraft Company at Long Beach for assembly and analysis. Douglas Aircraft and Firestone Rubber provided engineering assistance for laboratory analysis and reconstruction of the fuselage fuel cell. The result of these steps are summarized as follows:

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ENCLOSURE (1)

(1) That fuel activation and tank separation of portions of the lower fuselage fuel cell was confirmed as having occurred prior to the accident.

(2) That deformation of the fuel cell in the boost pump area indicated that the aft portion of the boost pump was sagging approximately one inch.

(3) That the fuel filter circumferential weld was broken.

(4) That material found in one of the fuel pump passageways was fiberglass.

(5) That no foreign material was found in the Fuel Filter.

An investigative trip was made to the O & R facility at NAS Alameda to trace the history of this particular fuselage fuel cell. History determination was not possible; however, the aircraft did receive a reworked fuel cell during the last PAR period. It is to be noted that fuselage fuel cells and backing boards are not always removed during a PAR period.

The aircraft did not have the following service changes incorporated:

66A	Engine Accessories-Modification of The Engine Intake Air Duct Seal
118	Engine Accessories-Provisions For Pressure Filling 4 Gallon Oil Tank.
149	Armament-Installation of Aero 3A Fuze Power Supply with ASM-N-7
156A	Furnishings-Provisions for Thermal Radiation Closure
163	Electrical-Addition of Aft Antennas for IFF and TACAN
171	Electrical-Modification of the Gun Charging Circuit
172A	Fuselage-Installation of JATO Provisions
177A	Armament-Installation of Bull-Pup Transmitter Circuit Time Delay
181	Electrical-Installation of Anti-Collosion Beacon
183	Hydraulic System-Modification of Catapult Hooks
184A	Armament-Installation of Ammo Link & Brass Chutes
186	Avionics-Installation of Provisions for TPQ-10 Ground Control Bombing System.

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ACCORDANCE WITH PARAGRAPH 70,
OPNAV INST 3750.6D

ENCLOSURE (2)

188A	Avionics-Installation of Remote AN/ARC-27 Indicator
200-2	Avionics-Installation of Radar Altimeter and Bearing, Distance and Heading Indicator
201	Electrical-Change to Primary Electrical Power Distribution System
203	Avionics-Installation of Sidewinder Capability
206	Hydraulic System-Installation of Fire Protection Spray Shield
207	Electrical-Modification of boost Pump Circuit
215	Fuel System-Removal of Fuel Cell Baffles
217	Instruments-Installation of Elapsed Time Clock Provisions
218	Electrical-Installation of Electric Windshield Wiper
219	Avionics-Installation of Remote Attitude Indicating System
220	Avionics-Modification of Angle of Attack Transducer
221	Electrical-Installation of Cockpit High-Intensity Floodlighting
222	Nose Landing Gear-Mod of Fuselage Fuel Tank Rupture Prevention

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (2)

PART VIII - The Analysis

a. Personnel Factors.

Investigation and analysis of the events prior to, during and following loss of fuel, flame-out and subsequent ejection reveal no contributing personnel factors. There was no prior condition discovered in the pilot's examination of the airplane or post start airplane check that would give warning of the events to follow. The airplane operated and functioned normally until the fuel streaming was reported by the wingman. An emergency situation developed when the fuel loss could not be controlled. The pilot and wingman recognized the situation as cause for an immediate landing. Action of the pilot to resume transfer following the rapid loss of fuel was proper. Establishment of communications with El Centro Tower and the let-down to get beneath the partial cloud layer in the El Centro area was sound operating procedure. It is noted that the first re-light attempt did not comform to procedures outlined in the A4D-2N Flight Manual NAVWEPS 01-40AVB-1 dated 1 December 1960, revised 15 July 1962. The procedure specified requires that the emergency generator be EXTENDED and the fuel control be in MANUAL for an airstart. The pilot was aware of this procedure and the procedure was outlined on his emergency knee board card. The following two airstart attempts were in accordance with prescribed procedures. However, the fact that no fuel flow could be obtained during the airstart attempts precluded an airstart regardless of procedure employed. The steps followed by the pilot in pointing the airplane toward open fields, introducing nose-down trim to the airplane and placing the feet firmly on the rudder pedals prior to ejection are indicative of the professional aviator. The pilot's action during descent in partially releasing the survival gear and pulling the manual D ring of the parachute also reflect calmness and proper training. The "line over" on the parachute canopy caused the pilot some concern. Liasion with the Naval Parachute Facility revealed that the "line over" phenomenon will occur about 2% of the time and is not a result of improper parachute packing procedure. NPF personnel also indicated that a "line over" does not increase parachute sink rate measurably. The situation can be corrected by "climbing up" the affected shroud line but reluctance of the pilot to do so is understandable. The injury sustained in landing was the result of impacting on the edge of a ditch and in all probability could not have been avoided.

b. Supervisory Factors.

None

c. Material Failures and Malfunctions.

(1) Main Fuselage Fuel Cell.

The main fuel cell, manufactured by the Firestone Rubber Company, was installed in BUNO 145066 during the PAR, March 1961. PAR rework records show that this tank had been reworked by NAS Alameda O/R prior to installation.

Aporoximately 75% of the bottom of the fuel cell was recovered. The recovered portion of the cell is depicted by white chalk. (See enclosure 11).

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ENCLOSURE (1)

During the investigation the AAR board, aided by DAC engineers and the Firestone Company representative reassembled the recovered portion of the fuel cell in an effort to determine if the main fuel cell had failed in any way.

Examination of the bottom of the cell revealed several areas of activation, one large area of tank separation and one area of deformation. (see enclosures(12-17)). From pieces of the fuel cell it was determined that only the activated (fuel soaked) areas had burned. Enclosures (12&13) clearly shows that the fuel cell did not burn beyond the activated area.

An activated area is that portion of the fuel tank which has had the self sealant section of the tank activated by the airplane fuel. Only the inside of the tank has a fuel proof layer of material; thus, for activation to start from the inside, this fuel-proof layer must be damaged/broken by some method. Because the outside layer does not have a fuel proof layer, fuel can penetrate the outer portion of the tank and activate the self sealant, thus causing a raised portion (ply separation) on the inside of the cell (see enclosure (15)).

The bottom of the fuel cell, from the fuel boost pump aft, shows signs of heavy permanent deformation (see enclosures (13 & 14)) while from the fuel boost pump forward there are only signs of activation and separation (see enclosures (13 & 15)).

From the previously cited signs of deformation the aft portion of the fuel boost pump appears to have sagged approximately one inch, (see enclosures (16 & 17)).

A faulty patch was found on one section of the cell wall. This wall damage had apparently been caused by a previouslyinstalled metal baffle plate. Although the edges of this patch had come loose, the damaged area was still covered. This defect was in no way a cause factor in this accident.

(2) Fuel Filter. The fuel filter was recovered by digging in the forward area of the impact crater; however, the filter clamp and cover plate were not found. The filter was taken to the NAF, El Centro, California Machine Shop and cut open. On examination, the fuel filter element showed no signs of contamination. Portions of the fuel filter elements were later examined by DAC Chemists and found to have no foreign material trapped in them. Having just completed a major check, the fuel filter element had been replaced approximately two flight hours prior to the crash. The fuel filter case circumferential weld (located at the cover plate retaining clamp end of the fuel filter) was found broken. The weld and weld break were analyzed by DAC engineers and determined to have been broken on impact, with the filter cover plate in place at the time of impact.

(3) Engine-Driven Fuel Pump. On disassembling the fuel pump, a "wad" of foreign material was found in one of the two fuel pump passageways located down stream of the pump gears. The foreign material, after examination by DAC chemists, was determined to be a glass substance similar to that used

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ENCLOSURE (2)

in cockpit padding. The foreign material also contained mud and clay similar to that found at the crash site. This, in addition to the fact that no foreign material was found upstream in the fuel filter and that it is a physical impossibility to pass this "wad" through the fuel filter into the pump, helped determine that the FOD material was injected into the pump as a result of impact.

(4) Fuel Flow Dividers. The fuel flow divider filters were examined by DAC chemists and found to contain only sand and clay similar to the ground at the crash site.

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ENCLOSURE (3)

Part VIII, ( ) Analysis

d. Facilities

The rapid response of the Coast Guard UF to the MAYDAY report was outstanding. Prompt acquisition of the pilot by the Coast Guard Crew was facilitated by the wingman's presence and the successful operation of the PRT-3 Beacon. Recovery of the pilot was effected by a civilian in a jeep type vehicle. Transfer of the pilot to a California Highway Patrol car was made at a farm house located approximately one mile from the landing area of the pilot. The pilot elected to remain in the Highway Patrol car for the trip to NAF, El Centro in lieu of transferring to the Navy Ambulance since the patrol car was air conditioned.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (2)

MEDICAL OFFICERS REPORT 1-62

AIR DEVELOPMENT SQUADRON FIVE, CHINA LAKE, CALIFORNIA

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS:

Malfunction or failure of the fuselage fuel cell was the cause of this accident. The pilot was familiar with the airplane, his mission and the target. The airplane was recently returned from PAR and was considered in excellent condition. That a wingman was present and able to give close scrutiny to the airplane during the sequence of events that led up to the impact of the airplane with the ground was most fortuitous. All these facts notwithstanding, exhaustive investigation and analysis of the fuel system components merely pinpointed the fuselage fuel cell as the area at fault. No absolutely clearcut defect was demonstrated. [redacted] (b) (5)

RECOMMENDATIONS:

With respect to the failure of the fuel cell, the only recommendation involves inspecting all the fuel cells during a PAR period rather than a random selection of fuel cells as a representative measure.

With respect to the "Mae West" or "line over" deformity of the parachute canopy, this feature has serious ramifications. The pilot attempted to change the deformity but stopped when it appeared that he might collapse the canopy. While the pilot's reactions are most understandable, this situation confirms the opinion of this Flight Surgeon that [redacted] (b) (5)

During a recent LPC lecture given at the Physiological Training Unit at NAS North Island, the chief parachute rigger, who had many jumps to his credit, dlaborated on the many measures that a pilot may do if he finds himself or his parachute in a compromised situation during descent. One example that has long been of concern to the pilots at this facility is a streaming parachute due to static electricity. A simple solution was offered: reach up, grab the shroud lines and pull them rapidly apart like "cracking a whip" so that the canopy skirt will billow. There were other problems discussed after the Chief's lecture that involved landing in mountainous terrain, "line over", and ripped panels and other topics. The pilots present were observed rather closely by this Flight Surgeon all the time. [redacted] (b) (5) The Safety and Survival training covers a multitude of timely and life-saving features but it would seem most appropriate that m more emphasis be placed on the parachute. If a man lands right or finds a situation that he can actively alter prior to landing, he'll be in a better position to survive. It is recommended that the Safety Center

MEDICAL OFFICERS REPORT 1-62

AIR DEVELOPMENT SQUADRON FIVE, CHINA LAKE, CALIFORNIA

CONCLUSIONS AND RECOMMENDATIONS

RECOMMENDATIONS: (Cont'd)

strongly consider surveying the experience of the Navy Parachute Facility as well as similar departments of the other services and produce a moving picture combining both actual situations and animated cartoons that would provide more definitive methods of handling a parachute. The next recommendation is a necessary corollary of the first; i.e., that consideration be given to providing more realistic parachute experience for all pilots which would include not only parachute hangs in appropriate harnesses but also jump training up to and possibly including live jumps from a transport type airplane. Some objections will almost certainly be raised against this recommendation on the grounds that more people will be hurt than helped. However, the new physical fitness program should preclude anyone partaking of this valuable program who is not in good physical condition.

ENCLOSURE (IX)

ENCLOSURE (8)

IMPACT CRATER HEADING 142°M

SPECIAL HANDL[illegible] REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (6)

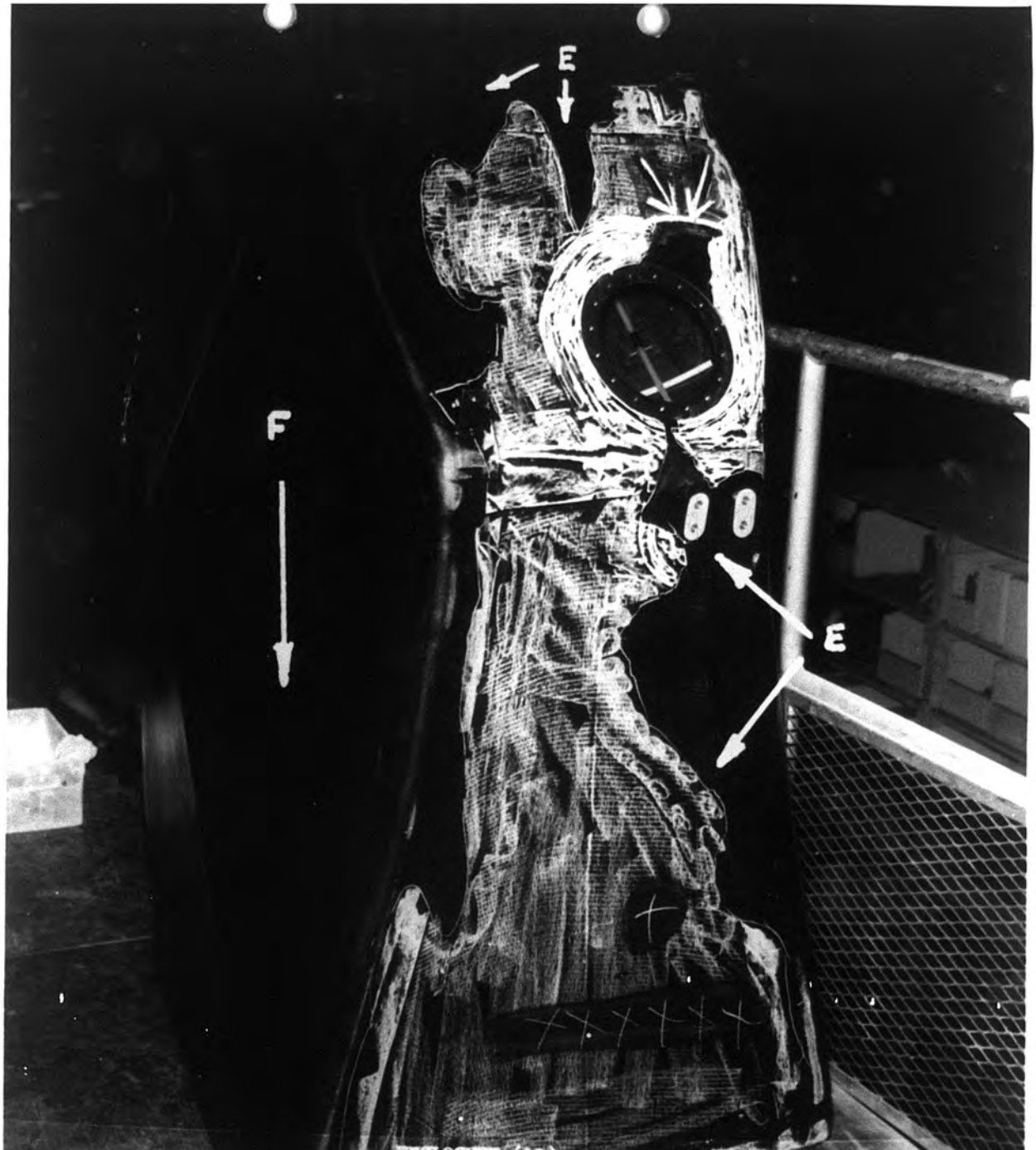
AFT ENGINE SECTION LOCATED ON FORWARD EDGE OF IMPACT CRATER.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (10)

IMPACT AREA - LOOKING IN DIRECTION OF IMPACT.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.



ENCLOSURE (11)

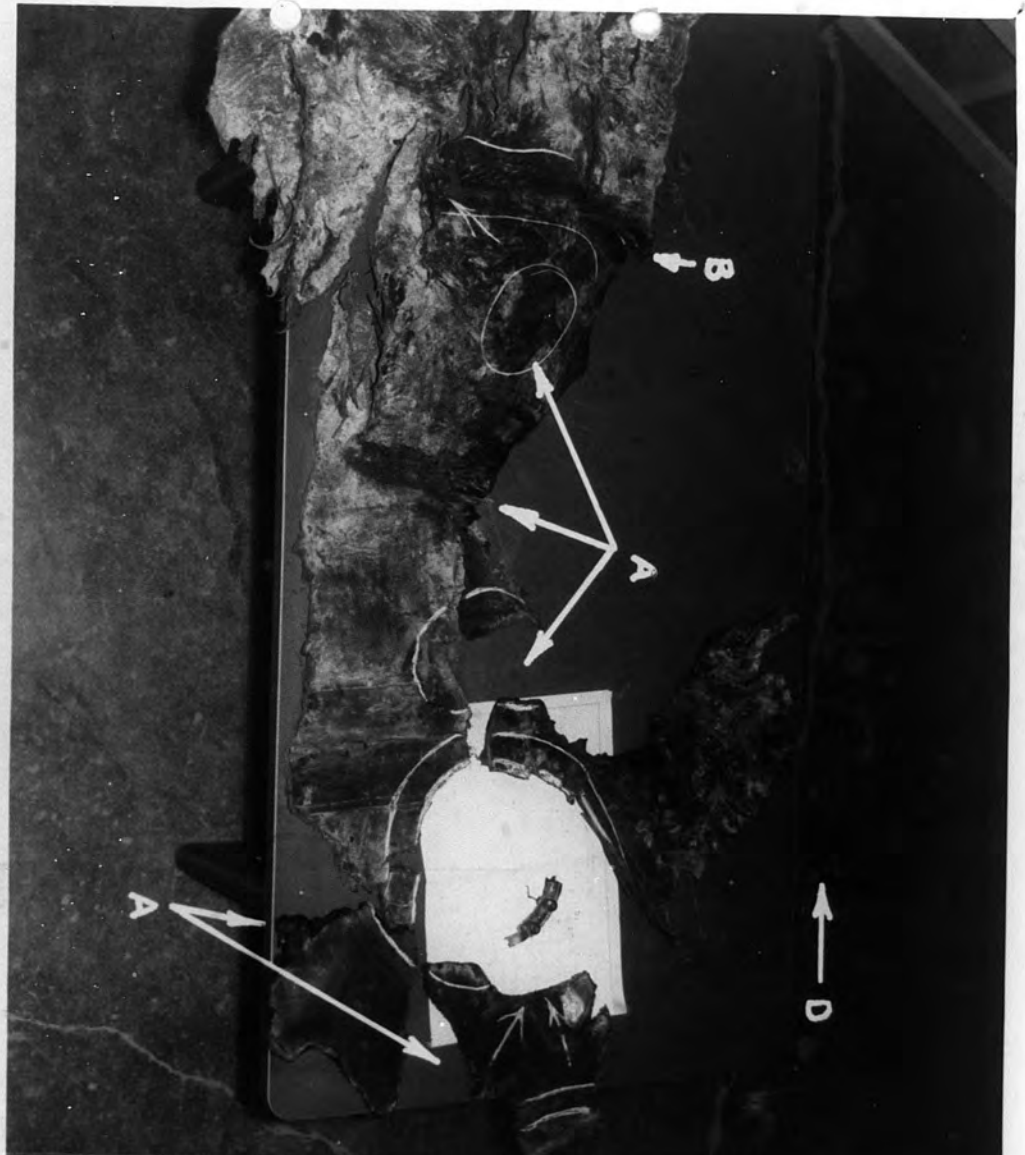
BOTTOM OF FUEL CELL. (a) CHALKED AREA SHOWS RECOVERED PIECES OF CELL. (b) SINGLE "X" SHOWS ONE ACTIVATED AREA. (c) MULTI "X" SHOWS AREA BOTH SEPARATED AND ACTIVATED. (d) ARROWS SHOW ACTIVATED AND DEFORMED AREA. (e) ACTIVATED AREA (f) FORWARD

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 5750.6D.

ENCLOSURE (12)

BOTTOM OF FUEL CELL - OUTSIDE. (a) ACTIVATION (b) ACTIVATION AND SEPARATION (c) FORWARD (d) DEFORMATION AND ACTIVATION.

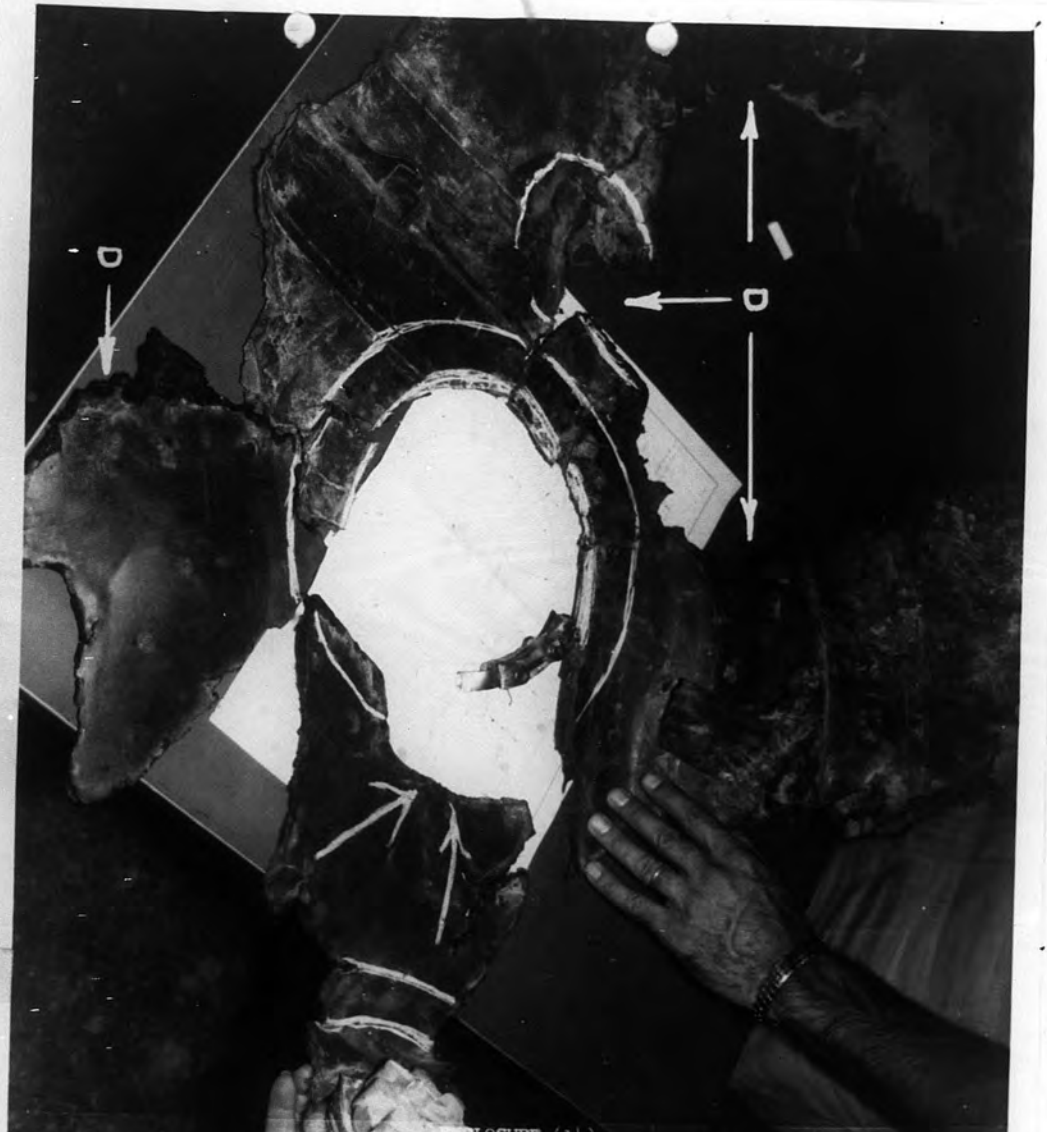
SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.



ENCLOSURE (13)

BOTTOM OF FUEL CELL - INSIDE., ARROWS SHOW ACTIVATED AND DEFORMED AREA. (a) ACTIVATED AREA (b) ACTIVATION AND SEPARATION (d) FORWARD.

. SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.



ENCLOSURE (14)

BOTTOM OF FUEL CELL - [illegible] CLOSE UP OF FUEL BOOST PUMP AREA. (a) ARROWS SHOW AREA OF ACTIVATION AND DEFORMATION. (b) OUTLINED AREA OF CELL LAYED OVER BLUEPRINT SHOWS BOOST PUMP FLANGE AREA. (c) OUTLINED AREA AT TOP OF PICTURE SHOWS CELL MOUNTING AREA (d) ACTIVATED AREA.

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.

ENCLOSURE (15)

BOTTOM OF FUEL CELL - FORWARD OF BOOST PUMP AREA. A. ACTIVATION AND SEPARATION. B. ACTIVATION C. FORWARD

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D

ENCLOSURE (16)

DEFORMATION OF FUEL CELL (INSIDE) JUST AFT OF THE BOOST PUMP. ARROWS SHOW ACTIVATED AND DEFORMED AREA

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D

ENCLOSURE (17)

DEFORMATION OF FUEL CELL JUST AFT OF BOOST PUMP. ARROWS SHOW ACTIVATED AND DEFORMED AREA

SPECIAL HANDLING REQUIRED IN ACCORDANCE WITH PARAGRAPH 70, OPNAVINST 3750.6D.